

# Canadian Computer Wholesaler

The Universal Eye:  
Photos or Video?

Boundaries Shift  
for Digital Cameras

Software Review:  
Dynamic Document Management

Hot Sellers in 'Edutainment'

Comdex/Fall:  
The Vegas Report

Lab Test:  
Plenty of Power for the Price!  
**Midrange Notebooks**

Dedicated  
Knowledgeable  
Sales Team

Prompt  
Customer  
Service

Weekly  
Specials

Outstanding  
Technical  
Support

Sales Personnel  
9 a.m.-4 p.m.  
Mon.-Fri.

Full Service Facilities  
in Toronto, Montreal,  
Vancouver

Toll Free  
Hot Line  
1-800-TO-EMPAC

Award  
Winning  
Systems

## AZURA has your viewing solution.

### AZURA Monitor Series

If you demand outstanding visual performance, safety and comfort, AZURA's monitor line provides you with a selection of high quality cost and energy-efficient monitors. Ranging in sizes from 15" to 19", from entry level non-interlaced, flicker-free monitors, to brilliant, detailed displays, AZURA delivers the visual clarity you demand while meeting strict international standards for user safety. As leaders in the monitor market, AZURA gives you optimum performance at an affordable price.

Model	AZT15A+	AZT17A+	AZT19A+
Size (Diagonally)	15"	17"	19"
Dot Pitch	0.28mm	0.26mm	0.25mm
Flat Screen	YES	YES	YES
Max. Resolution	1024x768	1280x1024	1600x1200
Scanning (Horizontal)	30-54kHz	30-59kHz	30-59kHz
Frequency (Vertical)	50-110Hz	50-110Hz	50-165Hz
Power Management	YES	YES	YES
Digital On Screen Display	NO	YES	YES
Warranty	3 yrs. parts and labour depot		



# AZURA

1-800-TO-EMPAC

www.empac.com

# EMPAC

Solutions In Computer Distribution

Vancouver Office  
188 Kennial Close  
Markham, ON  
L3R 9T9  
Ph: 905-940-2000  
Fx: 905-940-3004

Montreal Office  
3201 Rue D'Orléans  
St. Laurent, PQ  
H4T 1R6  
Ph: 514-345-8000  
Fx: 514-345-6501

Vancouver Office  
100-401 1 Viking Way  
Richmond, BC  
V6V 3R9  
Ph: 604-821-8177  
Fx: 604-821-0207

Cost  
Competitive  
Solutions

Advertisement logos and/or trademarks are registered trademarks of their respective companies

# CONTENTS

DECEMBER 1998 Vol. 4 No. 12

## NEWS

Comdex Fall: Less is More?  
By Jeff Evans and Grace Causseaux

12

## EYE ON THE INDUSTRY

Flyweights will Fight for Your Lap  
By David Tomsic

14



## THE PULSE

Sony VAIO World Conference: Digital Convergence Arrives!  
By Jeff Evans

15

## IN PROFILE

The Easy-Going PeopleSoft  
By Grace Causseaux

18



## LAB TEST

Power Notebooks: All Noteworthy Prices!  
By Sean Causseaux

20



## DIGITAL CAMERAS

The Universal Eye  
By Jeff Evans

30

## SOFTWARE REVIEW

The Paperless Office Comes of Age  
By John Patten

34



## EDUTAINMENT

New Thing Entertainment!  
By James Fischell

36

## INTERNET TELEPHONY

Voice Over IP: Talk About the Potential!  
By Paul Zane

38

## BOOK REVIEW

Visual Basic, for Proficient Beginners  
By Stephen Burns

42

## TECH TALK

Too Many Choices? You're Not Alone  
By Alan Zarem

43

## CONTACT THE EDITOR

### LETTERS

Canadian Computer Wholesaler welcomes your questions on current issues in the market, plus your feedback on our publication.

### NEWS

We welcome your stories regarding news and features topics for Canadian Computer Wholesaler! Send us to contact the editor directly with your suggestions.

### TEST LABS

We'd like to hear your feedback and suggestions on our Test Lab reviews section.

**Reader code**  
The Editor, Canadian Computer Wholesaler  
291-39 Avenue Ave, Toronto, Ontario M8K 2J8  
Fax: (416) 581-1031 E-mail: [jeff@pctech.ca](mailto:jeff@pctech.ca)

**Editor Grace Causseaux**  
Cell: (416) 260-7886 Fax: (416) 252-7882  
E-mail: [grace@pctech.ca](mailto:grace@pctech.ca)

**Associate Editor Jeff Evans**  
Cell: (416) 251-4624 Fax: (416) 581-0224  
E-mail: [jeff@pctech.ca](mailto:jeff@pctech.ca)

**Lab-Test Editor Sean Causseaux**  
Cell: (416) 525-8426 Fax: (416) 581-8214  
E-mail: [sean@pctech.ca](mailto:sean@pctech.ca)

## DEPARTMENTS



The Editor's Desk



Letters To The Editor



Cartoon



Industry Flash



New Products



Calendar



People



Reader Poll



AMSI	11
BIN-ED-0108	High-speed uplink
ACP	37
900-218-2111	http://www.acp.com
Geopay	8
1-800-555-2825	http://www.geopay.com
Canadian Internet World	99
900-213-2251	http://www.ciw.com
900 Components	31
1-800-251-7239	http://www.900.com
Hayes Computer Corp.	3
0803-560-2800	http://www.hayes.com
EuroPC	33
900-321-9370	http://www.europc.com
1-800-428-9186	http://www.europc.com
Padline	21
1-800-373-4734	http://www.padline.com
Inteq Technology Inc.	10
900-381-9820	
Inter-Pac	36
1-800-475-9800	
Japan Marketing	19
900-314-7331	http://www.japan.com
ICG Resources Inc.	27
1-800-234-0700	http://www.icg.com
LG Electronics	7
1-800-15-CANADA	http://www.lg.com
Fee Data	47
1-800-337-3219	http://www.fee-data.com
900 Computer Wholesaler	15
900-140-0221	http://www.900.com
Orbita	25
900-161-1001	http://www.orbita.com
Resco	12
900-90-5000	http://www.resco.com
Siemens Technologies Inc.	17, 68
1-800-768-0216	http://www.siemens.com
SMG	1
1-800-367-2388	http://www.smg.com
White Knight	23
1-800-455-2226	
1-800-463-1024	http://www.white-knight.com

**S**o I've now played checkers over the Internet.

I was feeling quite smug about my prowess until I heard my partner from Baltimore was just seven years old. Then I was absolutely crushed by a 61-year-old player from Florida.

Oh well. Checkers was admittedly something of a tangent I'd been contemplating the absolute giddiness of Microsoft Corp. and the way things I knew, I'd picked up a virtual checker from Internet Gaming Zone (<http://www.igz.com>), there are links to all kinds of services: e-mail, travel, an on-line encyclopedia and other groups. The worrisome fact is there are very few business opportunities that someone at Microsoft isn't at least investigating.

Consider the new Microsoft Cardline Phone System (\$399). You can leave or receive "answering machine" messages for certain colleagues, friends or family members who will still play designate who's important enough to make the phone ring. (Otherwise calls can go to voice-mail.) A speaker on the handset audibly announces who's calling. You can give voice commands, like "delete message," "return call" or "call Mom." A significant drawback: your PC has to stay turned on at all times.

Or, take a look at the WebTV Plus System that hit Canada this past summer. For \$299 for the receiver, \$99 for a wireless keyboard, plus about \$34.99 monthly for the service, the TV generation can tuck itself with the "Net" covered. The system offers sophisticated TV listing searching capability (a week at a time, by subject matter or actor's name, for example), "one-click" VCR recording, and picture-in-picture capability to let users switch TV in a box, while searching the Web, for example.

Could you have a better computing experience on your PC? Of course! But this technology could make its way into the still sub-mature market segment that doesn't own home computers. Whether for cost or comfort reasons, some people aren't ready for a PC, but they may be more than willing to improve their television experience.

## CONVERGENCE: NOT JUST A CUTE BUZZWORD!



source, access the Web and send and receive e-mail.

And don't forget the new AIMates. The new AIM and D.W. dolls are intended for ages four to eight. When you squeeze the toys here or there, they'll tell time, make comments or suggest games. They can also interact with various semi-educational computer games. With 5,000-word vocabularies, (\$10,990 when hooked to the PC) these toys are a far cry from the Miss Beasley doll I coveted when I was a kid. (She was bald when you pulled the string at the back of her neck.) One AIMates doll is \$149, the PC Pack is \$89.95, and software titles are \$44.95 each. At that price, I don't expect to find one under my Christmas tree this year. (I never got a Miss Beasley doll either.)

Here's the red point: Convergence is more than a coolie buzzword, and players across the industry are ready to pounce on the big opportunity. NCR, for instance, has gained significant attention for its Microsoft Book prototype — a flat-panel computer built into the door of a microwave oven. The idea is to provide services like banking, e-mail and shopping through an easy interface, without a mouse or keyboard. (The technology recently won "Technology Innovation of the Year" at an Annual Technology for Retail Banking conference.)

CCW's Associate Editor Jeff Evans reports technology is melting the distinctions between digital still image cameras and digital video cameras. See "The Universal Eye," page 30. As quality improves and prices drop, digital cameras are increasingly appealing.

Combine that camera with a notebook and modem and productivity skyrocket for insurance adjusters, real estate agents and journalists. For starters, CCW's Lab Test (page 20), examines the so-called "midrange" of the notebook market this issue, testing the functionality available at affordable prices.

To all our readers, from the staff at Canadian Computer Wholesaler, have a wonderful holiday season. ■

Grace Camilleau  
Editor

# Canadian Computer Wholesaler

Editorial Executive Editor

Associate Publisher

Jeff Deed Kitter  
Tilly Prings  
Hari Singh Khalsa  
Grace Camilleau  
(613) 745-5000

Editor

Jeff Deed Kitter  
(613) 745-5000  
Sonja Cawthron  
(613) 745-5000

Associate Editor

Jeff Deed Kitter  
(613) 745-5000  
John Homan  
Stephens Brothers  
Paul Latta  
David Thorsen  
Alan Zornes  
Alison He

Lab Test Editor

Jeff Deed Kitter  
(613) 745-5000  
John Homan  
Stephens Brothers  
Paul Latta  
David Thorsen  
Alan Zornes  
Alison He

Art Director

Jeff Deed Kitter  
(613) 745-5000  
Karen Hartung  
John Kehler

Production Staff

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Executive Sales Manager

Jeff Deed Kitter  
(613) 745-5000  
Bill Young  
Linda Lengroove  
Faylinn Amin  
Kan Jevons  
Kerr Lagan Chen

Marketing

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Advertising Sales

Jeff Deed Kitter  
(613) 745-5000  
Bill Young  
Linda Lengroove  
Faylinn Amin  
Kan Jevons  
Kerr Lagan Chen

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Customer Service

Jeff Deed Kitter  
(613) 745-5000  
John Kehler  
Janice Leighton  
(613) 745-5000  
1-877-688-2881

Canadian Computer Wholesaler

is published 12 times a year by  
GlobeLink International  
Computer Publishers Inc.  
under license from  
Canada Computer Paper  
All rights reserved

### Toronto Office

Suite 200, 100 Yonge St.  
Toronto, Ont. Canada M5E 1H9  
Tel: (416) 595-6226  
Fax: (416) 595-2274

### Vancouver Office

Suite 400, 425 Carrall St.  
Vancouver, B.C. Canada V6C 0B3  
Tel: (604) 686-2574  
Fax: (604) 686-2646

### Tel Aviv Office

PO Box 100  
Tel: 972-3-2702-4500  
Fax: 972-3-2701-8110

Subscriptions, applications and change of address notices must be made in writing to one of the three offices.  
For advertising, to certified subscribers, \$100 per year for not specified categories.

Canadian Computer Wholesaler is a registered trademark of GlobeLink International Computer Publishers Inc. The publication may not be reproduced in whole or in part without the express written permission of the publisher. The opinions expressed in articles reflect personally those of the publisher.

Published in Canada  
Through post to Vancouver B.C.  
800-561-1134  
ccab.



# Teamwork Builds Success...

## Thanks For Making Us #1



Seems like every time the experts review our networking products and services we win awards. But the real winners are our RMs who like a well-trained team push us to build faster, stronger, more reliable products and services. With cutting edge networking products and services you can take the work out of networking and enjoy the rush of knowing that you're on a winning team.

To find out more about our VAR program, new products or latest promotion, call 1-800-SMC-4YOU or visit our Web site [www.smc.com](http://www.smc.com).

*Enjoy the Win.*

1998 Annual VAR Business Award Report Card - Networking Hardware		
	Best Product & Pricing	Best Partnership
SMC #1	87	86
#2	84	79
#3	86	74

1-800-SMC-4YOU



Call Now For Your Free Evaluation Of Selected SMC Networking Products

# SMC®

1-800-SMC-4YOU  
[www.smc.com](http://www.smc.com)



## You're Overclocking

On Aug. 26, I purchased a Celeron 300 with an Abit BH6 motherboard and an ATX case for \$195 including taxes. I have been in games PC running Windows 98 at a 133MHz - 1MHz for less than the price of a Pentium II 350MHz CPU. It runs pretty fast as a 1.6GHz booster and a fast client.

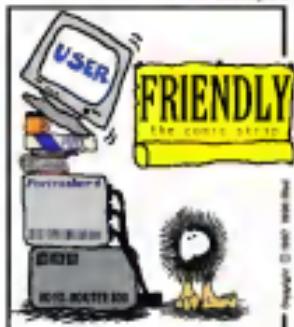
By simply going to the Celeron from the AMD my frame rates in Quake 2 increased dramatically from 12 fps to 35 fps! (35 fps is considered the minimum for decent network/internet game play.)

As well, most of the newer games such as Electronic Arts' MM 30, Transporter and Unreal (they use 3D graphics hardware accelerated video cards) run quite smoothly on this system. In the Spring of '98 I will purchase a new Riva TNT 300.00 video card to keep my system current, and then in the fall drop in a Pentium II 500MHz chip. As you can see, this system should stay current for at least two years for a minimal cost of \$300.

I read Craig Thompson's letter (CCW, November page 10). His point is well taken for users who need PCs for business applications. People who need to be aware of the consequences of overclocking such as increased heat, reduced CPU lifespan and voltage tolerances.

I added a 3.5-inch fan for additional cooling.

Art Profer  
Field service rep.  
ESETL systems support  
Brampton, ON



The man below says, "Yes, you're in a hot air balloon, about thirty feet off the ground." To which the balloonist replied, "You must work in Information Technology." The man on the ground says, "Yes, I do. How did you know?"



## Thanks for Motherboard Article

I really enjoyed "Fast driving the 700MHz Athlon64" (CCW November, page 48). It was a very well-written and informative article.

I cannot praise the AD700 enough. I use this board in my personal systems as well as in customers' computers. I believe that it is one of the best Super 7 boards.

You mentioned that the Tennessee's TS-ABX board has a 8005 feature as built from AGP first. The AGP90 also has this feature with 8405 Version 1.2, so you can select the AGP or the PCI video card to be the primary display. This sort of info probably won't be available before print time, but just thought you might be interested in it!

The 8005 update is available on the Adtek Web sites: <http://www.adtek-usa.com> or <http://www.adtek.com>.

Keep up the great work with Canadian Computer Wholesaler. It is truly a great publication!

Greg Brown  
President  
Stevie Computer Solutions  
Arlingtonburg, Ont.

## Letters to the Editor

We welcome your letters on industry issues and concerns, as well as your comments on our magazine. We reserve the right to edit your contributions for length and clarity. Please write to The Editor via e-mail at [ccw@pc.ca](mailto:ccw@pc.ca) or fax (804) 636 2896.

Hello. I just heard a joke that I'd like to tell. When Mike told it, everyone laughed, so it's probably very funny...



A man is flying around in a hot air balloon. He suddenly realizes he's lost, so he reduces his altitude and approaches a man on the ground below. He shouts, "Excuse me, can you tell me where I am?"



"Well, everything you told me was technically correct, but it's no use to anyone." To which the man on the ground replied, "You must work in business." "Yes," said the balloonist. "How did you know?"



"Well, you don't know where you are, or where you're going, but you expect me to be able to help. You're in the same position before we met, but now it's my fault."



It wasn't funny the first time either

Don't Underestimate Engineers  
"A basic PC in PC sales is the nature of the PC itself - a box full of electrical components which were designed by engineers, not investors" (CCW October, page 43). What type of medical equipment does Jeff Davis think is designed by investors? Guitars? Trumpets? Loud speakers? High-fidelity amplifiers? Guitars?

Most things in this world are designed by engineers. Although our current issue market PC is almost entirely intended to be music boxes, there's no reason you shouldn't have a "PC for musicians." Sooner or later someone will put together a low-noise, low-distortion Pentium II or PowerPC box with a state-of-the-art sound card and market it to musicians. It probably just a matter of time before some engineer designs and builds one. -DJ

David Brown  
Senior site engineer  
Atomic Energy of Canada Ltd  
Ottawa, Ont.





## LG puts high refresh rates on display.

The LG line of monitors puts on a brilliant display. High resolution and refresh rates, sharp, sharp images, and vivid colour. That's why LG ranks third in the world in the manufacture of monitors and why we are a provider to 7 of the top 10 brands. LG is focused on product technology leadership and customer satisfaction. So, resellers can rely on LG to deliver products with unsurpassed speed. Check out our display and email us an LG Monitor Partner today at [www.lge.ca/resseller](http://www.lge.ca/resseller).

### NO-WAIT rebate.

Take advantage of The No-Wait Rebate. Purchase any of these monitors before December 31<sup>st</sup> and receive up to a \$450 rebate. Visit our web site for complete rebate details. For even more benefits, register for the LG Partner Program.



Model	No. Wait Rebate	Basic Rebate	Key Specs
200LC	\$ 50	\$ 250	15" TFT-LCD
2150LC	\$ 50	\$ 250	21" 240P 1600 x 1200 80 Hz B max flicker free resolution
22T	\$ 50	\$ 250	19" 240P 1600 x 1200 80 Hz B max flicker free resolution
2300LC	\$ 25	\$ 150	17" 240P 1600 x 1200 65 Hz B max flicker free resolution
2300SC	\$ 10	\$ 100	17" 240P 1280 x 1024 87 Hz B max flicker free resolution



**LG Electronics**  
WE PUT PEOPLE FIRST

[www.lge.ca/resseller](http://www.lge.ca/resseller)

EMI

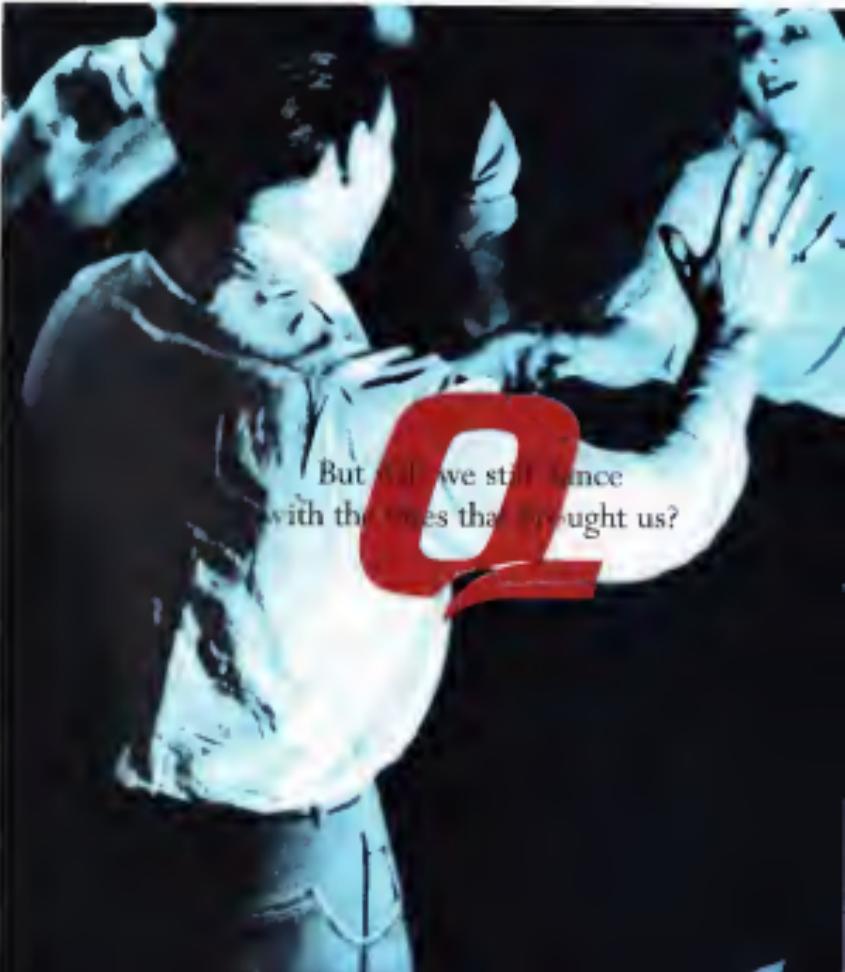
Ingenic Micro

Merics

Peripheral Express

Sunstack

Tech Data



But will we still dance  
with the ones that brought us?

Resellers are how we got here. Resellers will share our success. Period. With partners with a Compaq that **COMPAQ** offers every kind of customer than ever. For more answers, better answers, reach us at **Better answers:**



©1998 Compaq Computer Corporation. All rights reserved. Service mark of Compaq Computer Corporation.  
Trademarks and/or service marks are the property of Compaq Computer Corporation.

increased opportunities, new technologies, products and services. You're now  
every kind of solution, a Compaq that values teamwork, and no-lets, more

[www.compaq.ca](http://www.compaq.ca), call your Account Representative, or call us at 1-800-668-7670.

# INDUSTRY FLASH

## Microsoft NT vs Windows 2000

Despite the uncertain consternations now associated with computers and the year 2000, Microsoft Corp. says its Windows NT 5.0 product line is expected to ship in 1999 and will now be known as Windows 2000.

With the benefit of that predict, NT will enter the mainstream, Microsoft predicts. Windows NT Workstation 5 will now be known as Windows 2000 Professional and Windows NT Server 3.0 becomes Windows 2000 Server.

Microsoft plans to use the tagline "NT vs Windows NT 2000" for reasons of clarity.

Jim Allchin, director vice president of the personal and business systems group at Microsoft, said in a statement, "Windows NT is going mainstream."



## Mitsubishi Makes Bold PC Moves

Mitsubishi PC Corp. is aiming to be a major player in the Canadian IT market and has unveiled strategic alliances with Wang Global and Reltaco Data Systems for computer support in the country. Meanwhile, the company is making a big investment.

At a specially public event at Teleglobe CN Tower, John Pennington, country manager, Canada, for Mitsubishi PC, said the key to Mitsubishi PC's success will be its ability to develop a positive brand identity as a supplier of complete and reliable business computing solutions.

While Mitsubishi has a relatively low profile in the PC industry in Canada, despite being a large-scale supplier of some of the best CRT and LCD screens to the monitor market. As part of

a \$10 billion a year high tech global conglomerate, Mitsubishi PC Corp. has performed well to meet the latest computing technology.

Mitsubishi wants to build a first-rate service infrastructure in Canada with all of Wang Global, one of the world's largest network integration and services providers. Keith Beaman, director of service and support for Mitsubishi PC Corp., said, "Our strategy for the corporate buyer, quality of service and support is just as important as the broad products in creating a systems purchase. In short, this will help us reduce average down time for our customers by more than 80 per cent."

Mitsubishi has also signed Intronis Micro, Tech Gate, and EMU Data Systems as participating distributors, and is looking to develop a strong channel base. To kick start its channel recruitment in Canada, Mitsubishi has established an Elite NBS Program, which, for qualifying resellers, supplies demonstration computers, marketing and advertising funding, price protection and sales training.

## Torch Data will distribute NCR

Monogramme Data-based Torch Data Canada Inc. has announced a distribution agreement for NCR Canada Ltd.'s complete product line. That includes the Terceros REDDES, for scalable data warehousing, the MicroMark servers, storage cabinets, modular arrays, robotic tape libraries,

MicroMark, Top Grid and Lifekeeper software, SAN and SAN servers, and Unix MP/VMS and Advanced Server 1.0.

Torch Data says it plans a comprehensive educational program for resellers.

## UPS Keypads Cases PC Cards

## The Merry iMac

Apple Computer Inc. appears set to have a merry Christmas, thanks to positive sales of the innovative iMac home computer, as well as iMac desktop and notebook models.

Apple retailers report that in addition to iMac computer hardware sales, Mac third-party software and peripheral businesses have also picked up.

Apple claims that total sales of the iMac would shortly pass the half million mark, but Canada Inc. announced the latest version of QuickenPro 9 for the Mac. A popular small business accounting package, this most current version of Quicken is aimed at allowing small business to estimate cash flows by managing payroll, tracking GST and PST, producing automatic payable statements, factoring, creating custom invoices, tracking customer contacts and billable time, and posting cheques.

Steve Johnson, general manager at Intuit Canada, said, "We're pleased to offer Macintosh small business owners a complete Canadian accounting solution that will help eliminate their accounting headaches. Our research shows small business owners want easy-to-use software that is flexible enough to meet their individual needs."

## Networking the Home over Phone Lines

Our homes may soon be networked over existing phone lines, thanks to technology from Intel Corp. Family members will be able to share Internet access, files and games using the existing phone wiring in their houses.

Intel is currently shipping samples of its single-chip home networking silicon solution — the Intel 21145 Phoenix/Revenue LAN controller — to PC and peripheral manufacturers. **BB**

# *Are you looking for the fastest and least expensive PC ?*

Then build your own with ABIT's 100Mhz  
BX6 Pentium® II based motherboard with Data Buffers!

## ABIT's BX6 includes the following :

- Soft Menu® II the new generation of Jumperless CPU auto-detection from the company that invented the Jumperless mainboard. Supports the Pentium® II 233MHz ~ 400MHz.
- Write Protect Anti-Virus Function from Award's BIOS to protect the vital Boot sector of your hard drive.
- Year 2000 ready and fully compliant. No worries here.
- 6 chip data buffer solution recommended by Intel for increased RAM stability when using 4 DIMMs of SDRAM/8 Banks of memory.
- Top quality 48 Pin clock generator to allow specialized functions such as 133MHz and Infrared and USB peripheral support.
- Top quality tantalum capacitors for increased long term reliability.
- Hardware monitoring thanks to National Semiconductors LM79 chip which checks on system temperature, system voltage and system fan speed.



Soft Menu™ II circuitry

Check out more of the details at ABIT's web site at <http://www.abit.com.tw>



ABIT Computer Corporation  
Tel: 810-3-2619-1000 Fax: 810-2-2619-1011  
Web Site: <http://www.abit.com.tw>  
E-Mail: [sales@abit.com.tw](mailto:sales@abit.com.tw)

ABIT Computer (MSA) Corporation  
Tel: 1-510-423-2000 Fax: 1-510-423-1093  
Web Site: <http://www.abit-usa.com>  
E-Mail: [sales@abit-usa.com](mailto:sales@abit-usa.com)

Authorized Distributors :  
Asia Engineering Corporation  
Tel: (304) 238-2629  
Fax: (414) 231-2303

InnoTech Technology (Taiwan) Inc.  
Tel: (04) 2323-9600/2323-9620  
Fax: (04) 2371-9480  
E-Mail: [innotech@innotech.com](mailto:innotech@innotech.com)

Mini-Micro Supply, Inc.  
Tel: (415) 621-1000/408-259-4896  
Fax: (415) 621-2303

Resonant Consulting Inc.  
Tel: (414) 525-4403/230/234-2332  
Fax: (414) 525-4404  
E-Mail: [resonant@resonant.com](mailto:resonant@resonant.com)

# Comdex/Fall: Less is More?

By Jeff Evans and Grace Cavarra



This year's Comdex/Fall show in Las Vegas was focused on making technology simpler, smaller, more usable and less expensive.

Of course, digital cameras, large flat-screens, ultra-portable notebooks, PC/13 and USB connectivity products were not in full force. But some major players were notably absent from Comdex this year, including IBM, Compaq and NetScage. An IBM official said the company had decided its marketing money was better spent on smaller, more targeted events. Of note, the company still held demonstrations and meetings with invited customers during Comdex in hotel suites.

Despite the skip-jumpers, Comdex reported about 220,000 attendees and 1,650 exhibiting companies.

Bill Gates led off the show with the first keynote speech, promising to make Windows simpler and more robust. An unexpected highlight was an appearance by a kilted Microsoft researcher named Bill Hill, who demonstrated a new text display technology called ClearType. ClearType lets much more readable screen text to be displayed on a LCD flat-panel screen, a huge benefit to people who spend a lot of time reading documents on-line. It will be a further incentive for mainstream computer users to consider flat panels over traditional CRT monitors. The technology is expected to increase font display resolution by as much as 300 per cent and will be incorporated into the operating system of some future date, it's a matter of "months, not years," said a Microsoft spokesperson.

Oracle Corp. CEO Larry Ellison provided a strong antidote to the Windows view of the universe at his keynote, withly ridiculing the notion of millions of small NT servers popping up in restaurants, home offices and medical centers. Characterizing decentralized servers as a very "bad idea," Ellison outlined his vision of a connected business-and-home computing world, where professionally managed, reliable, cost-effective servers running databases (Oracle databases especially) would enable all manner of improvements and innovations in business, education, and consumer activities.

On the trade show floor, there was a strong push towards LCD and plasma flat-panel displays, ranging from postage-stamp-sized LCDs mounted in eyeglass frames to 30-inch wall-mounted plasma screens. NEC, Sceptre, Panasonic and others graded prices on 13- and 14-inch LCD screens well below the US\$1,000 price point, and said sales finally seemed poised for major growth in 1999.

Windows CE-based handhelds and mini-laptops with color screens were also omnipresent, from vendors such as HP, Sharp and Casio.

The real point-of-interest at the Sony booth had to be Memory Sticks — a proposed solution to inexpensive storage of digital content. The tiny storage medium is shorter than a stick of *Java Fudge*, and not much thicker. Naoya Suzuki, a marketing manager for Sony Electronics, based in San Jose, Calif., said the flash memory sticks, which are encased in hard plastic, are more durable, reliable and cheaper than compact flash. (The sticks also have less contact pins than compact flash.) Memory Sticks are currently available in 4MB

and 8MB versions, (priced at US\$34.99 and US\$44.99, respectively). They handle all kinds of digital content, and by spring, Sony intends to build Memory Stick slots into a number of products including still and video cameras, sound recorders and notebooks. Meanwhile, the sticks are shipping and can be used with a PC Card adapter.

Storage was a big focus at the show, ranging from Compaq's Click! removable mini hard drive, to Maxtor's high capacity SuperDisk floppy, to tape backup libraries from Overland and Hewlett-Packard. DVD also showed great strength, including rewritable DVD systems, though conflicts over standards still continue to hold back progress in this arena.

Home networking was a significant theme. Epiphany Inc., as part of the Home Phoneline Networking Alliance (HomePNA), launched its line of 10.2 chipsets to let homes or small businesses plug their networks by plugging into existing phone lines. Products from third parties based on that chipset are expected in Q3 '99, to deliver up to 10Mbps networking over regular phone lines. The Ethernet ports are installed in the participating PCs, at an expected cost of about US\$100 per card.

Competing solutions from companies such as Draper, Utah-based InLogix, want to make home networking even easier, using the ubiquitous electrical outlets, which are substantially more prevalent than phone jacks. The company's Passport product (currently shipping in the U.S., but not yet in Canada) will network two PCs and a printer at 350Kbps in a home or small business at a price of US\$199. A small device connects one each PC's parallel port and plugs into an electrical outlet. (Software needs to be loaded onto the PC too, of course.)

Concurrent Computer's Apprix U2 is a combination hardware-software solution designed to let users attach a second monitor and keyboard to a PC, to let two people to simultaneously share one computer, including Internet access and peripherals.

Both Microsoft Corp. and Compaq Corp. demonstrated their upcoming office suites. Compaq's WindPerfect 2000 suite, due out in early 1999, will include the Paradox 9 relational database, the Toolkit 2.0 Web authoring and presentation tool, the NetServer Internet publishing tool and the Compaq PrintOffice publishing software.

Beta 2 of Microsoft Office 2000 became publicly available in mid-November (<http://www.microsoft.com/office/2000/office/CPV/default.htm>). Features include the ability to publish Office documents as HTML files for use on the Web. Intranets are supported, with built-in features for collaboration, subscriptions, notification and search. Menus adapt to users' preferences by tracking their usage patterns.

AT&T will ship its new VP304 Webphone early in the new year. Over regular phone lines, users can get picture-in-picture video-conferencing, priced at US\$399 per phone.

Canadian companies at Comdex included: Calgary's WLAN. While the company's wireless products currently transmit at up to 4Mbps, by Q3 '99, WLAN plans to introduce technology capable of 30Mbps.

And X-Portal, priced at \$19.95, is an Internet search amplifier from Toronto's Kaufman Consulting Services Ltd. The software automatically strips out the ads, junk and other noise wasting time from Internet searches. It uses software agents to deliver search results with stunning speed — a nightmare for Web advertisers, but a gigantic boon for Web surfers looking for speed and simplicity. *GE*

# SAMSUNG

## Disk Storage You Can Drive... Hard

Hard Drives and CD-ROMs

Simply powerful. Samsung storage solutions offer the high performance, speed, and dependability demanded in today's computing environments.

Driven to perform...



**NEW!**  
16x/16x

### HD5 Specifications

	5.4	32	44	43	54
Formatted Capacity (GB)	1.4	3.2	4.4	4.3	5.4
Read/Write	4/3	2/1	4/2	3/1	4/2
Average Seek Time (ms)	10	10	10	10	10
Rotational Speed (RPM)	3,600	3,600	3,600	3,600	3,600
Interface	PS/2	PS/2	PS/2	PS/2	PS/2
• PS/2 Drive 4.4 hard					
• 32x Model	16x	16x	16x	16x	16x
• 16x Model	10x	32x	32x	32x	32x
Buffer Size (MB)	512	512	512	512	512
Emulation Speed (MB/s)	5.400	3.000	3.600	3.400	3.400
Warranty (years)	3	3	3	3	3

Hyperdrive 4 Series      Vortexdrive 5 Series      Vortexdrive 6 Series



### CD-ROM Drive Specifications

	220	52x/32x/Read/Write
Speed	220	52x/32x/Read/Write
Interface	PS/2 (5100)	PS/2 (5100)
Rotational Transfer Rate (kilobits)	4.000/kb/sec	1000/kb/sec (Read), 3000/kb/sec (Write)
Access Time (1/2 stroke) (ms)	60	60
Buffer Memory		
Supported Disc	CDA, CD-RW, Photo CD, Multisession, CD-RW/DA, CD-ROM, CD-R	
Warranty (years)	1	1

**Simply Samsung.**

[www.samsungcanada.com](http://www.samsungcanada.com)

PE  
1-800-667-0000

PS/2  
1-800-667-0001

PS/2  
1-800-667-0002

PS/2  
1-800-667-0003

PS/2  
1-800-667-0004

# Flyweights



By  
David Tsvakler

Ever since RadioShack introduced the Tandy Model 100 in 1983, the computer industry has been on a quest to design the ideal digital companion — a device both light enough and powerful enough to be useful as a constant carry-along.

The upper end of this market has been defined by ultra-light notebook computers. These are light and powerful, but also have tended to be quite costly. At the other end are the pocket-sized organizers, personal digital assistants (PDA) and handheld computers. While these are less expensive to buy, they are also quite limited, compared to full-fledged notebook computers. In the middle is a sizable gap that at the moment, is opportunity and increasingly a battleground where notebook and handheld computers will fight for turf.

Pushing the handheld PDA up-market are machines based on Jupiter, the latest version of the Windows CE operating system. Coming down from the notebook side, we see a number of manufacturers shifting the power of Pentium notebook computers into increasingly tiny packages.

## Jupiter Rises

Microsoft introduced Jupiter, also called Windows CE HPC Pro Edition, in early October. Among the enhancements are support for more kinds of hardware, from full-size screens to mice, an improved Pocket Outlook e-mail client, improved database support and improved synchronization.

Hitachi-Packard Canada recently showed CCW its Jornada 820 handheld PC, which uses the Jupiter version of Windows CE as the operating system. The 2.5 pound Jornada looks a lot like one of the new crop of tiny Pentium mini-notebook computers. It has an 8.2-inch color screen that will display a full 640 by 480 pixels, and a near (99 per cent) full-size keyboard. Unlike other CE devices, the Jornada isn't a touch-screen device — it has a built-in trackball for cursor control.

The unit is powered by a StrongArm processor operating at 233MHz. It comes with 16MB of RAM that can be upgraded to 32MB, plus 16MB of ROM. It also has a built-in 56Kbps modem.

As a Windows CE device, available software is limited to Microsoft's Pocket Office suite, along with a few third-party applications.

HP characterizes the Jornada as a 2.5-pound e-mail companion. The device will work for approximately 10 hours on a single charge (a

will

Fight

for

Your

Lap



HP JORNADA 820

higher-capacity battery, good for about 15 hours, is available as an option).

The Jornada isn't intended to be an alternative to a PC, but rather a companion, says Paul Patterson, HP Canada's sales development manager for mobile products. Patterson says the Jornada offers convenience and better manageability. For example, it doesn't have a hard drive and applications are stored in ROM — less at import and management headache because user-induced errors arising from loading unauthorized applications that crash the machine are largely eliminated.

## The Incredible Shrinking PC

Contuing the Jornada with Intel's crop of full-featured mini-notebook computers, Sony's recently introduced PCG-M50F weighs a half-pound more (2.97 pounds), and costs more than twice as much (\$1,568 for the Jornada 820, \$3,699 for the Viao). However, the Sony offers a full-blown Pentium computer in that tiny shell: 266MHz processor, 64MB of RAM, a 4.3GB hard drive and a 10.4-inch TFT screen.

Similarly, Toshiba of Canada has just announced a couple of new models in its tiny PC stable: the Portege 3010CT and a Latitude 110CT. The Portege 3010 sounds quite similar to the Viao, although at \$3,379 it is a bit less expensive. The Portege comes with a 10.4-inch active-matrix screen, a 266MHz Pentium processor, a 4.3GB hard drive and 32MB of RAM. The silver-colored sliver-light has a magnesium alloy case for increased rigidity, and the unit is just 0.78 inches thick and weighs less than three pounds.

The two-pound Latitude 110CT uses a 233MHz Pentium processor and has a 4.3GB hard drive built-in. It will sell for \$3,109.

Although a few other Japanese notebook computer makers (Panasonic and Hitachi, for example) have been making mini-notebooks for a few years, these are primarily for Japanese domestic or Asian markets. With Toshiba's launch of the Latitude in North America, the mini-notebook category was established here. However, it will be a small niche market.

Whether Japan-inspired PCs or shrinking notebook PCs will be able to capture this category is still a big question mark. While the size of these two platforms is converging, the gap in functionality and cost remains significant. ■

*David Tsvakler is a journalist specializing in high-technology reporting and is Editor of The Computer Paper. He can be reached at [dsd@jcp.ca](mailto:dsd@jcp.ca).*

# Announcing new unique feature - "SecurityEasy" from Legend QDI

SecurityEasy provides protection  
from unauthorized users  
(lock on front panel,  
keyboard and mouse)

SecurityEasy is the essential  
tool to enhance computer  
security and privacy.



We have more innovations than others.  
Specify for Legend QDI Mainboards which bring you  
more unique features and benefits.

## BrilliantX Series (A400X)



LogoEasy  
Your own Logo utility



SecurityEasy  
Your Servers/IPC security tool



SpeedEasy™  
Jumper-free for CPU speed setting



ManageEasy  
Enhanced system management  
software

## LEGEND QDI®

Where Innovations Come Naturally

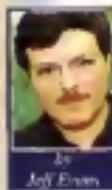
<http://www.qdipc.com>

1-877-INFO-QDI

an essential feature in  
PC boards for VESA, Matrox,  
and Creative graphics, as  
well as AT&T, Compaq, and  
IBM Servers. Legend QDI  
mainboards are also  
available with the  
following features:  
- 100% Lead Free  
- 100% RoHS Compliant  
- 100% Green  
- 100% D.O.R. Compliant  
- 100% TCO99 Compliant  
- 100% ECO Compliant  
- 100% ESD Compliant  
- 100% HALO Free  
- 100% Lead Free  
- 100% RoHS Compliant  
- 100% Green  
- 100% D.O.R. Compliant  
- 100% TCO99 Compliant  
- 100% ECO Compliant  
- 100% ESD Compliant

For USA customers, please visit [www.qdipc.com](http://www.qdipc.com)  
for Canadian customers, please visit [www.qdipc.ca](http://www.qdipc.ca)  
for European customers, please visit [www.qdipc.eu](http://www.qdipc.eu)

# Sony VAIO World Conference: Digital Convergence Arrives!



By  
Jeff Erwin

Sony Corp's recent VAIO World Conference in Tokyo publicly marked a drive to be the world leader in the integration of video, audio, computer and telecommunications technologies. Sony has long led in both professional and consumer video and audio, and more recently has been a major player in feature film, video and music content creation. The company now intends to play a global role as the chief integrator of computers with traditional media. Sony has revolutionized the desktop video market over the last two years, with its introduction of an inexpensive 4-mm digital videotape format, and its promotion of the IEEE 1394 FireWire digital data communications standard (the Sony version of FireWire is called iLink). With the advent of this low-cost all-digital solution for video capture and editing, most of the complications of mixing analog video with digital computer systems have been eliminated.

Most Canadian desktop video VAIOs and system integrators would confirm Sony has been the catalyst and the leader in this rapid evolution.

## ILink, You Link, We All Link

Sony is including iLink connections in its latest VAIO desktop and notebook PCs. Intel Corp., along with other major makers of PC motherboards, intends to do likewise in the months to come. By this time next year, FireWire/iLink connections will be a readily available feature on many PCs. That will help spark a rapid rise in the use of the PC as a video creation tool for both consumers and professionals.

## Why Sony? Why VAIO?

There has been some initial confusion about why Sony, a traditionally premium priced manufacturer, would decide to enter the cut-throat consumer PC market.

Sony's philosophy behind the launch of the VAIO personal computer line makes a lot more sense when the company's history, technology portfolio, and product lines are considered as a whole. Since its founding in the ruins of post World War II Japan, Sony has been a uniquely creative company when it came to seeing new trends and developing functional new technologies and products. Sony secured Japanese rights to the newly invented transistor in the early 1950s, and developed the portable transistor radio. The company created the videocassette recorder and camera, and, with Philips, introduced the first CD audio player. Its monitors, disk drives, chips and other components are used in millions of computer systems all over the world.

In a way that's only partly matched even by industry giant IBM Corp., Sony has strength across all the component parts needed to achieve convergence. Sony's grand plan is to leverage all its diverse areas of expertise, from all the various divisions of the corporation (video, div-

play, audio, ergonomics, storage, microelectronics and telecos), to be the first to provide a truly seamless, usable convergence solution.

The VAIO computer platform, as thus not just another PC line. Rather, it is the centerpiece of Sony's evolution into the leading convergence pioneer.

## Band Practice

Sony's drive to convergence is a mammoth task, not only in terms of creating the technological components, but in regards to coordinating all areas of the company in the creation of integrated products that will appeal to a mainstream market. Sony executives expressed some frustration at the difficulty of getting all the parts of the company — divisions, people and products — to work as part of the grand plan. (For example, the new 3.5" FD 200MB floppy disk product has taken longer to reach the market than was hoped, possibly hurting its chances to be adopted in the next IEEE storage standard.)

However Sony is not exactly moving slowly. A new generation of Sony products was on display at the VAIO World Congress, ranging from VAIO desktop PCs configured for digital video and photography production, to DVD and mini-disk players and recorders, to the latest Mavica digital cameras, and the ultra-light VAIO S10 sub-notebooks.

The congress also featured the one-pound C1 handheld PC, a full-powered Windows 98 computer that can fit in a pocket. A tiny "magic box" for transmitting analog video to digital format was also shown.

Finally, as a harbinger of consumer electronic things to come, a Robot Pet was demonstrated — a digital dog with sophisticated antennae movement, motion sensors, and a simulated "personality" that uncannily mimicked the behavior of a real dog.

## Inventing the Future

Following the official event, journalists toured Sony's advanced research lab in Tokyo, where artificial digital life form simulations, new user interface technologies, and ultra high-speed Internet technologies are being developed. Also, Sony demonstrated new applications in digital theatre, professional video production, digital photography and high-speed videoconferencing.

Of note, Sony's original mission statement included the injunction that "engineers must be allowed to dream." For more than 50 years, Sony's technological dreaming has helped shape the modern world. The company shows no sign of losing its ability to see new visions and turn them into reality.

*Jeff Erwin is Associate Editor of Canadian Computer Wholesaler. He can be reached at [jef@erwin.com](mailto:jef@erwin.com).*

**Sony's drive to convergence is a mammoth task, not only in terms of creating the technological components, but in regards to coordinating all areas of the company in the creation of integrated products that will appeal to a mainstream market.**

# Best Overall... Recommended... Editor's Choice!



LT1200G, 12.1" LCD



FT15G, 14.5" LCD  
Computing Canada March 1998



BT15, 15" LCD

Sceptre's entire lineup of innovative flat panel LCD monitors won Canadian Computer Wholesaler's prestigious Innovation '98 award for technical excellence. Call Sceptre and find how easy (and affordable) it is to see for yourself.



"When it comes to making top quality monitors at very competitive prices, Sceptre has all the angles covered."

*The Computer Paper, May 1998*

"One of the most impressive flat panels ever survival is the 15.1-inch Sceptre BT15. Sceptre has probably done more to develop the flat panel market... than any other manufacturer. This company has a broad line of flat panel monitors and has been the leader in pushing the cost of flat panel monitors down—a benefit of being a major manufacturer of LCDs."

Jeff Evans—*Computer Paper, July 1998*



The Sceptre DT7A was awarded Canadian Computer Wholesaler's noteworthy Innovation '98 Award for technical excellence in Computer Peripherals.



Dragon Eye D97A  
19" CRT, 16" dia. view  
Computing Canada April 1998



Dragon Eye D73A  
17" CRT, 16" dia. view  
Best Overall, Computer Paper July 1998  
Best Overall, CCW August 1998



Dragon Eye D54  
15" CRT, 14" dia. view  
Budget Dealer, Computer April/May 1998

"The picture on the D97A is extremely sharp, dark backgrounds are very deep and lines are clean. Overall the the Sceptre D97A is a great monitor for a decent price."

*Computing Canada, April 1998*

For the dealer location nearest you call 888-350-8989  
For more information regarding Sceptre products visit our website at [www.sceptre.com](http://www.sceptre.com)

**SCEPTRE**  
EXCELLENCE FOR ALL THE WORLD TO SEE



| PeopleSoft Inc.

# The *Easy-Going* PeopleSoft?

by Grace Cressman

Is it any coincidence that enterprise software vendor, PeopleSoft Inc., is based in a California town with the tellingly same name of Pleasanton?

"We are seeing more and more business from the fact that companies like us add value in," said Jeffrey Read, director of marketing for PeopleSoft Canada Ltd. "We're very people-based in our overall philosophy."

PeopleSoft claims to have 97 per cent customer satisfaction, and listed one of the company's mottoes as "Outstanding customer service."

The personality approach may be paying off. In 1997, the company reported a net income of US\$103.3 million on revenues of US\$815.3 million, which translates to 81 per cent growth over the previous year. The Canadian subsidiary reported 77 per cent revenue growth. Estimated revenues were \$79 million in 1997, according to International Data Corp. (Canada) Ltd.

IDC Canada listed PeopleSoft Canada as second in size to SAP Canada (Canadian revenues were \$185 million in 1997). PeopleSoft employs 6,000 people worldwide, 380 of those are spread across six Canadian offices. (That's a significant increase, from 132 Canadian employees in 1996.) Local research and development activities include Canadianization of products and French Canadian versions.

Historically the company's strength was in human resource/payroll solutions, but the Financial module added HR in 1997. According to IDC, PeopleSoft's strong vertical markets include government, financial services, manufacturing and higher education. The company offers more than 40 components for financials, human resources, payroll, distribution, manufacturing and supply chain solutions. (Its Guelph, Canada's Algoma Steel became the 1,000th customer to implement PeopleSoft Human Resource Management Solutions.

PeopleSoft likes to promote quick installation processes. A typical installation would take about six months, said Read, who dismissed claims of very speedy SAP installations. "We could say we have three-week installations, if we wanted. We look at time to benefit."

At a press briefing this fall in Pleasanton, PeopleSoft focused a lot of attention on its Treasury product — released last May. That functionality is crucial to the master of control in an organization, said Read, particularly market volatility and complex global business structures. According to a recent PeopleSoft survey of 186 senior financial executives, cash management is "becoming more important in a turbulent economy." Fifty per cent of the executives said they've started to increase their focus on cash management over the past three years. (That figure is expected to increase 86.7 per cent over the next three years.)

And Read said up to 51 per cent of corporate treasurers authorized between five to 10 or more per cent of net income directly to cash management. Cash management, according to Tim Knight, PeopleSoft's own global treasury manager, is "The effective management

and utilization of funds flow to meet the short-term and long-term needs of the organization."

The first Canadian company to license Treasury (as part of the full enterprise suite of PeopleSoft's Enterprise Resource Planning software) was Montréal-based GTC Transcontinental Group. (The printing and communications company earned revenues of \$1.12 billion in 1997, and has 9,000 employees spread over 40 offices.)

GTC Transcontinental's first implementation phase reportedly took less than six months and included deployment of the Financials, Distribution, Human Resources and Payroll modules. The full rollout to all locations is expected to be completed by July 1999.

Jeanlyn Lapow, project manager and director of re-engineering at GTC Transcontinental and his company was a decentralized organization that generated redundancies. "Instead of having 25 separate accounting departments, our shared services centre will allow a core group of financial specialists to handle the majority of our financial operations in one centralization location."

The organization had evaluated SAP as well, but Lapow commented, "SAP definitely takes much longer, and we didn't want to run the risk. We had the significant pressure of the year 2000, and we couldn't run the risk, not to complete the centralization by the year 2000."

PeopleSoft has also been making a big push into what it calls the "mid-market" — basically targeting companies with revenues of between \$50 million and \$250 million, said Read. Pricing for the PeopleSoft solution typically starts at about \$800,000. Read said:

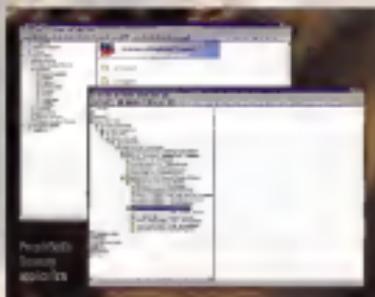
The company says it has 700 partners worldwide. Ottawa-based Compu-Link's OLAP technology, for example, is embedded in the PeopleSoft software.

Bob Moonhead, Compaq Computer Corp.'s PeopleSoft sales manager for the Americas, said 40 per cent of PeopleSoft's NT business sits on Compaq hardware.

Justin Greenbaum, president of Enterprise Applications Consulting in Berkeley, Calif., said PeopleSoft has a good focus on the analysis of transactional data, and has "tipped the scale" on what CEOs and CFOs can do with the information they receive. As to whether or not a PeopleSoft implementation means less upheaval than competitor's implementations, Greenbaum said, "To a certain extent it's up to the customer itself. SAP is so much more functional... SAP has a much greater propensity to force a company to make great changes, but it's not a requirement."

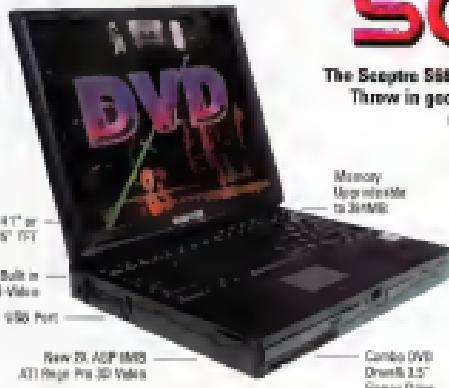
"PeopleSoft is a company that can't market the breadth of functionality of SAP," said Greenbaum. "On the other hand, this is a company that is extremely well regarded by its customers for customer relations and product quality."

Grace Cressman is Editor of Canadian Computer Wholesaler. She can be reached at [grace@buttercup.ca](mailto:grace@buttercup.ca)



# YOUR ONE-STOP SOURCE!

Broad Selection • Competitive Prices • Brand Names



## SCEPTRE



The Sceptre 55000 deliversazing performance for a notebook computer. Throw in good ergonomics, and you have a notebook computer that really can substitute for a desktop system.

### Soundx 6800

#### PENTIUM II PROCESSOR AT 300MHZ

- 14.1" XGA Active Matrix TFT Display
- 1000 RPM Hard Drive
- 10.5" Ultra ATA Hard Drive
- Removable Combo 3X DVD/CD-RW Drive and 3.5" Floppy Disk Drive
- New 20.8GB IBM ATI Rage Pro 3D Video
- EISA 3D Surround Sound and Video-in/Video-out
- Intelligent Lithium Ion Battery
- Carry Case
- PERC3 58K VMS Fax
- Microsoft® Windows® 98
- "Recycled"

Recommended, CRN Test Center Oct. 1998

#### Motherboard



ASRock 800-A2000  
Motherboard

#### Hard Drive



Quantum Maxtor  
10.5" WESTERN DIGITAL  
TOSHIBA  
1.3GB & 1.5GB up to 10GB

#### Monitor



KOMODO  
Microprocessor by Sceptre  
10.5" Color  
Microsystem Monitor

#### Notebook



Soundx 6800  
14.1" TFT 300MHz  
Notebook computer

#### LCD



15" available in black

Intel® Acer® ii  
ASUS Tek™  
DIGIDOM

#### Multimedia



EASTERN®  
Complete Home  
Theater System

#### Multimedia



EASTERN®  
Multi-Media Entertainment System  
INT'L is also available

#### Crates & P.S.



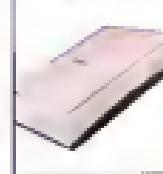
KME®  
Computer system 200 MHz  
Processor 10.5" TFT  
monitor 1024x768  
16MB memory

#### Keyboards



KME®  
1024x768 Multimedia Keyboard  
10.5" TFT monitor  
16MB memory  
1000 RPM hard drive

#### Scanner



KOMODO Sceptre  
1200 dpi, 20 ppm  
Scans to PC, 1000 dpi  
Resolution  
1000 dpi resolution

Dealers  
Wanted



LAPRO Marketing Corp.

109-3771 JACOBUS ROAD, RICHMOND, B.C. V6V 2M5 TEL (604) 231-1628 FAX (604) 231-1628

Web Site: <http://www.lapro.com>

All brand names are registered trademarks of their respective owners.



# Power Notebooks, at Noteworthy Prices!

By Sean Carnahan

For many business in today's information world, a portable computer can usually meet the difference between productivity and failure.

For the so-called road warriors, computing on the go is increasingly crucial, but it can also be vital for employees simply needing to take work home on the weekend.

Notebook computers allow mobile users to do nearly everything they do on a desktop machine, without being tied to their desks or having to deal with small and outdated machines. The only problem is price.

Notebook machines are always much more expensive than their desktop counterparts. But it's not always the manufacturers to conference desktop technology into notebook-sized components. For the absolute newest in notebook technology, it's not uncommon to expect to pay between \$1,000 and \$10,000. It's certainly possible to get notebooks

computers for around \$500, but many notebooks in that range are slow, clunky and they don't have the latest features.

Somewhere between those extremes lies an area worth exploring, with mid-range notebooks offering a nice balance between features and price. Although notebooks in this range may not have the latest processor or all of the gadgets most office or performance and functionality mobile users need, without requiring a second mortgage on the house.

## The Test

We asked readers to submit notebooks in the \$2,000 to \$4,000 mid-range price range. Benchmarking was performed using 3DPCore's SystemBench software. During testing, screen resolution was set to a resolution of 1,024 by 768 with a 16-bit color depth, power management software was disabled, and

machines were powered by their AC cards.

We also ran an extended battery test using software by Gary Morris at Amateur Radio Computer Services in Woburn, Mass. It's important to note this only provided us with a ballpark figure, and that battery life tends to vary from charge to charge and battery life is also dependent on use of components like the CD-ROM since the battery usage spikes. That means estimated mileage may vary.

## Fujitsu LifeBook E300

**Street Price:** \$2,000

**Pros:** With a 12.1-inch screen and 800 by 600 resolution, the screen is a joy on the small side, but it "multi-scales" with a 1,024 by 768 resolution area consisting of two buttons for clicking, and a center button with directional scrolling built in. Off the button in the direction you want to get the EngaTec technology is a nice alternative to the a touch pad.

The EngaTec has an extended volume control for each and every adjustment.

The S/PDIF port has an extended brightness control.

The keys for the components support hot-swapping.

**Cons:** Although the LifeBook E300 supports hot-swapping of components, the release mechanism for the components is hidden under the machine, which makes removal of the components a bit awkward while the machine is running. The EngaTec is a bit too responsive at times. Delicate work can be a bit difficult if the settings are set to faster speeds, as the user can easily overshoot the target. This can be fixed by slowing down the pointer, but this is still a minor to get it to work on the other side of the screen.

Although the floppy drive can be accessed externally via cable, including directly the machine means sacrificing the battery.

Fujitsu has just introduced its notebook line in Canada, and it's off to a running start with the LifeBook line. At the most basic configurations and end of the LifeBook scale, the standard LifeBook E300 costs for \$2,000 but comes with just 32MB of RAM. To meet the pricing requirements for this month's test, the E300 was upgraded to include another 32MB of RAM, which increased the system performance accordingly.

The E300 has a number of nice details as well. Although both the EngaTec and the hot-swapping ability could use a bit of work for increased usability, both are good illustrations of where the LifeBook line is headed, and it looks impressive.



## NEC VersaNote VR300

**Street Price:** \$2,400

**Pros:** The case aquascapes in the CD-ROM drive, floppy drive and battery simultaneously. The 12.1-inch TFT display allows for a screen resolution of 1,024 by 768. The keyboard and pointing stick is very stable. The machine comes with a 56Kbps modem built-in.

**Cons:** If you close the lid and open it again, the machine takes a quick while to unspool. With only 32MB of RAM onboard, the VersaNote isn't the speediest machine around.



With the battery, CD-ROM and floppy drives all built inside the case, the VersaNote is already going well. With the good display, nice keyboard and the built-in modem, it becomes even better, and well-suited to life on the road. The floppy drive backs to the RAM, which may not be sufficient for some power users. A bit of extra RAM, though, and this machine is a great machine to travel with.

# FUJITSU INTRODUCES A NEW LIFE FORM

## LIFEBOOK E SERIES

Large bright TFT display  
for superior visibility

Portable and responsive  
12.1" flat-panel display

Flexible configuration  
with fold-out swing  
multi-function keys

## LIFEBOOK L SERIES

Thin laptop option for  
increased portability

Easy to handle slim 12.1" TFT  
and 11.1" LCD

Optional mobile Li-Ion  
battery provides ultimate portability

**LIFEBOOK**

Contact with a superior notebook is now possible with the introduction of the Lifebook™ E Series and Lifebook™ L Series to the Canadian reseller channel. Those who have encountered the new Fujitsu Lifebooks describe them as uniquely developed for human interaction. They display highly-evolved ergonomic features such as full-size keyboard and large palmrest. The compact structures of these advanced notebooks provide extraordinary flexibility in a sleek and remarkably attractive form. Fujitsu invites today

Visit [www.fujitsu.ca](http://www.fujitsu.ca), or call your distributor for more information.

*Build for Human*™

### Lifebook E Series Highlights

- Up to 200 MHz 300 MHz or 233 MHz Intel® Pentium® II processor
- 11.1" VGA TFT or 12.1" SVGA TFT display
- 32 MB SDRAM expandable to 160 MB
- 5.0 GB, 4.1 GB or 3.2 GB hard drive
- Built-in 100/1000 modems with full duplex speakerphone capability
- 3-year International Limited warranty

### Lifebook L Series Highlights

- 200 MHz Intel® Pentium® II processor
- 12.1" VGA TFT display
- 32 MB SDRAM expandable to 160 MB
- 2.0 GB hard drive
- Built-in 100/1000 modems with full duplex speakerphone capability
- 3-year International Limited warranty

**FUJITSU**

FUJITSU CANADA, INC.

(905) 603-5454, 1-800-263-8716 [www.fujitsu.ca](http://www.fujitsu.ca)



## Dell Dimension 1100-T3

Street Price: \$2,999

**Pros:** The 1100-T3 is powered by a 350MHz AMD K6 chip, which turned in a very good performance. The machine also has the option for Pentium chips of up to 350MHz, for users who aren't keen on the P6. The machine ships with 128MB of RAM.

At 1,024 by 768, the resolution is high quality, with more room on the desktop.

The large case has the room to hold the CD-ROM drive, floppy drive and battery simultaneously.

The 4GB hard drive is one of the larger drives in the portable arena at the moment.

**Cons:** Because of the inclusion of all of the major components simultaneously the notebook is a bit on the thick side.

Although the 1100 comes with a 56Kbps modem, it ships as a PC Card, meaning that there is effectively one less available slot, when installed.

Based in Naperville, Ill., Emerson has made a great name for itself in the desktop replacement field. The 1100-T3 has good performance, and everything is included in the case to minimize downtime due to component swapping.



## Compaq Armada 15020M/T

Street Price: \$2,499

**Pros:** The notebook has sufficient room in the case for the CD-ROM drive, floppy drive and battery to be installed simultaneously.

There are four programmable keys above the regular keyboard, for setting up macros, for example.

The speaker system sounds quite good.

There is a physical volume control on the exterior of case, which makes it easier to quickly adjust the sound.

The notebook ships with an internal 56Kbps modem.

**Cons:** The speakers have been placed directly under the area where the user's forearms and wrists rest, which muffles the sound. The maximum horizontal resolution on this 12.1-inch screen is 800 by 600 pixels.

The machine ships with Windows 98 instead of Windows 95.

There are no Windows keys on that model. We emphasize this because Windows keys make using the Start Menu on a portable machine much easier. Scrolling through the Start Menu using a touch-pad or track-point can be a real chore. This is one of the thicker notebooks in the roundup.

In the end, this is quite a nice machine for the traveler, with all of the necessary components (floppy drive, CD-ROM drive, battery and modem) onboard at the same time. (Note: Although the Compaq notebook did not obtain a first score for the benchmarking, this may be the result of any of a number of factors, including incompatibility with the acceptance the benchmarking score. This is likely not something that will affect us.)



## Toshiba Satellite 4000CDT

Street Price: \$2,799

**Pros:** The 350MHz Pentium II offers good performance.

The pointer-control is the AccuPoint controller, which is like IBM's track-point. For users who aren't really comfortable using the track-point, the AccuPoint offers a great alternative. The floppy drive, CD-ROM drive and battery all fit into the case simultaneously.

Although it's not into the same spot as desktop keyboards, Toshiba has included a Windows key in the upper right-hand corner of the keyboard, for easier use.

The sound on this machine is quite good.

**Cons:** The left- and right-click buttons may be a bit awkward for some users, with one above the other, as opposed to left and right orientation.

There is no modem with this configuration.

At 2.1 inches, the 4000 is a bit on the thick side.



## Ultimate 1100

Street Price: \$2,999

**Pros:** The 1100 comes with a 300MHz processor, Pentium II processor and 128MB of RAM, and turned in a high benchmarking score.

At 14.1 inches, the screen is nice and spacious.

The case holds the CD-ROM drive, floppy drive and battery simultaneously.

The touch-pad on this model is one of the more user-friendly.

The 1100 comes with a carrying case.

The case contains an RCA video-capture port and a TV-out port.



## Performance

**Cons:** The 8.1GB hard drive is a bit small, and there's no modem with this particular configuration of the machine. (However, it's worth noting that the standard configuration of this model comes with a 4GB hard drive and a 56Kbps PC Card modem, for a \$2,200 street price.)

Ultimate's 1100 is a great choice for a desktop replacement model, with a larger screen, very useable touch-pad, fast processor and lots of RAM. As everything is included within the case, it becomes a great traveling machine as well. (Regular travelers would be advised to drop the extra memory and get the regular configuration with the larger hard drive and the PC Card modem instead.) With the same video capture and output options, it becomes even more useful for multimedia, as well. Even at the full price, it's definitely worth considering. Special note: Passerbu can custom-configure Ultimate's systems at <http://www.passerbu.com>, by logging in with your desired processor/ram.

Toshiba's got one of the best names in the notebook business, and it's easy to see why with the Satellite 4000CDT model. It's got good sound, all the major components are included in the case simultaneously and it's got a great power control. Although there is no modem shipped on the machine, the Satellite 4000CDT is otherwise a complete machine that should make most people happy.

# Intelligent solutions



ARMOUR AR3564



The key to intelligent solutions for your customers' needs is top quality products that work in harmony with one another. Intel has the leading edge in motherboards, processors, AGP video cards, and network cards to name a few. From the fully boxed product down to the OEM product, White Knight Distributing has them all.

The **ARMOUR AR3564** is an example of the quality that is inherent in all of the White Knight systems. The Intel® motherboard fully takes advantage of the Intel® Pentium® II processor 350MHz and the Intel® 740 AGP video card. Combining other quality components to these assures your customers of quality systems.

Whether you need complete systems or need components for upgrades, White Knight Distributing has all the intelligent solutions!



[www.white-knight.com](http://www.white-knight.com)

Western Canada  
105 3780 Jacobs Road  
Richmond, BC, V6V 1T9  
1-800-688-6168

Alberta Office  
4710 14th Street NE  
Calgary, AB T2E 6L7  
1-800-688-6081

Eastern Canada  
245 W. Brimley Creek Rd.  
Retiredge HI, ON L1B 1L1  
1-800-688-6089

Halifax Office  
200 Wright Avenue  
Dartmouth, NS B3B 1R6  
1-800-735-0550

**White Knight**  
DISTRIBUTING  
A div. of West Pacific Trading Inc.

**MAG Verity 880CDT**

Street Price: \$2,899



**Pros:** The Verity ships with the 300MHz Pentium II processor and 64MB of RAM for speedy performance. The touch-pad features Speedscroll technology, which allows the user to scroll up/down or left/right in a window just with a brush along the edge of the touch-pad. The 880CDT comes with its own carrying case.

**Cons:** No modem is included with this configuration. The floppy drive must be swapped with the CD-RDM drive.

Probably more familiar to most of us as a monitor company, MAG also makes a line of portable computers.

The 880CDT is a basic-looking machine with a lot of power under the hood, including a speedy 300MHz Pentium II processor and a lot of RAM. Users who get literally *up* in the face of the touch-pad may find the Speedscroll function a useful addition. On the other hand, the lack of modem and the need to swap the floppy disk in and out of the machine may make it less than ideal for people who are on the road a lot.

All in all, the 880CDT is a powerful and capable machine.

**IBM ThinkPad 380XD**

Street Price: \$3,599

**Pros:** Like the rest of the ThinkPad line, the 380XD has a good solid case, making it more sturdy than most other portables.

The CD-RDM drive, floppy drive and battery are all in the case simultaneously, eliminating needless component swapping and relocating.

There are external controls on the 380XD for both sound volume and the brightness of the screen, both of which come in handy when Far From Home on the desktop screen.

For users who are fond of the touch-pad, that track-point is a genuine pleasure to work with. It provides excellent pointer response without the hassle of "left-and-right, left-and-right" sometimes necessary for covering large screen distances on the touch-pad.

The function keys are nicely sized and separated from the rest of the keyboard.

**Cons:** Like other models in the ThinkPad line, the 380XD is rather thick. With a 338MHz Pentium processor, the machine isn't one of the faster models available for the money.

The keyboard has no Windows keys, which are key in the Internet age. The ThinkPad uses the older Windows 3.5 operating system.

The 12.1-inch 800 by 600 passive screen may be too small for some users.

Even with a slower processor, older operating system and a smaller screen, the IBM ThinkPad 380XD is wonderful machine to work with. IBM's attention to detail pays off in a nice, sturdy case, a great keyboard, external controls volume and screen brightness, with all the components inside, and a wonderful pointer control. The 380XD is a great entry-level notebook from a big name.

**Hyperdata 5027B**

Street Price: \$2,999

**Pros:** With a 300MHz Pentium II chip, the Hyperdata 5027B is one of the fastest notebooks tested this month. The 14.2-inch screen is a nice size, allowing a screen resolution of 1,024 by 768.

Stepping up from the world of CD-RDM, the 5027B includes a DVD-RDM drive. This makes it ready for the anticipated DVD revolution, while it's backwards-compatible with traditional CDS. The largest case allows the DVD drive, floppy drive and battery to be in the case at the same time, eliminating the need for component swapping and relocating.

As on a desktop keyboard, the Hyperdata's keyboard includes two Windows keys for increased usability. The 5027B hard drive is the largest included in this month's roundup.

The machine is well-aimed for ports, including video out, a parallel port, and two USB ports (which makes the machine ready for the DVD and USB revolutions).

**Cons:** With this configuration, the modem isn't built in, and takes up one of the PCMCIA slots.

Hyperdata's notebooks are always a treat to look at, and the 5027B is no exception with a sunburst display and powerful processor, lots of RAM, a larger hard drive and a DVD drive. Since all the components are already in the case, just need to switch CD-RDM drive with floppy or keyboard, and the machine comes with a good selection of parts, the Hyperdata 5027B is a great notebook for the creature looking to the future.

**Scenic Systems 7500T**

Street Price: \$3,999

**Pros:** The use of the 266MHz Pentium II chip along with 64MB of RAM allowed the 7500T to turn in a fast performance.

The 14.1-inch screen, with a resolution 1,024 by 768, is a great size, with lots of space.

The ScenicX comes with a carrying case.

**Cons:** The issue this is ScenicX swapped the floppy drive with the CD-RDM drive, which could be a bit inconvenient. There is no modem included in this configuration.

This machine turned in great performance in the benchmarking tests with great components and a lot of RAM. A large TFT screen makes it even better, as does a wide variety of ports. Although the track pad wasn't very good, the lack of a modem and having to swap out the floppy for the CD-RDM drive is a bit troublesome, otherwise, this is a great machine with a lot going for it.





Spanplus-53  
Teflon® Teflon



Lynx-55  
rolling menu



Three-  
level



Scary  
books



Ultra-SD  
Memory



### Your Peripheral Partition

Netmedia  
Keyboard



**Twinhead Streamline MX2 3000T2****Street Price:** \$2,840

**Pros:** The 200MHz Pentium chip is very powerful, and with the 4MB of RAM, helped this machine to be in the best in networking scores for the results. The machine has two USB ports. The case is large enough to hold the battery, CD-ROM and floppy drives simultaneously, eliminating the need for component swapping and reboots. There is a 300x pixel resolution, and hardware control of volume for quicker adjustment.

**Cons:** The touch-pad on the machine is not a lot touchy and hard to use.

The bright, silverish coloring of the machine may not last long.

The Streamline tested this month has color palette suggestive of futuristic technology from old movies, but grants a lot of power under the hood. In fact, the combination of components inside judges the performance up substantially. With a monitor onboard and two USB ports, it becomes even more attractive. The only thing that could be problematic is the touch-pad, which was over-hyping and not very accurate on the unit we tested. This is a great machine from a company that knows the ins and outs of notebooks.



Performance



Performance

**Gateway VortexBook Pro 7750****Street Price:** \$1,838

**Pros:** The notebook has two USB ports along the front of the machine. The systems hard drive goes into one of these, and the other two will hold any combination of floppy drive/CD-ROM drive/battery.

It has both a modem and a 16MHz-Real-T Ethernet connection.

Using the 200MHz Pentium II chip, the VortexBook turned in quite respectable speed.

There are two Windows keys on the 7750's keyboard.

**Cons:** The user can't have the battery, floppy and CD-ROM drives in the case at the same time, although the floppy drive can be attached externally with the CD and battery are used. The 7750 charged through the battery charge quicker than most other machines, so our Informant battery mark.

On the road, the inability to have the floppy drive, CD-ROM drive and battery inside simultaneously may be problematic, so would be the fewer battery life. But for desktop users or people moving between offices, with a network jack built in and a comfortably spaced keyboard, the VortexBook 7750 might be just the thing.

**Sony MHD PCG-900****Supported Retail Price:** \$3,099

**Pros:** The incredibly small design makes it perfect for working in tight spaces.

It has a 650 hard drive and a modem inside.

The battery pack is not up at the point where the screen pivots away from the keyboard. When the battery pack is removed, a special attachment can be connected which has monitor, printer, serial, keyboard and mouse ports. This is an exciting design.

The 900 has both IEEE and an IEEE 1394 Firewire port.

**Cons:** Both the CD-ROM or floppy drives must be attached, which can be a bit awkward. Additionally, the user must find an extra place to plug in the power for the CD-ROM.

The screen is smaller, at just over 10 inches.

The speed isn't up to the performance of larger machines.

In a field where the thickness of the other machines tends to blow, around the two-inch mark, the 900 is less than one inch thick.

With that in mind, it's impressive that Sony has managed to squeeze inside a full 4GB hard drive, a modem, USB and Firewire ports into the body of the machine. Because of the size though, some components had to be moved, and the most notable is that either a floppy or CD-ROM drive is included in the body of the machine. However, the system is great for working in a tight space, like on an airplane. For those users, the tiny size of the machine and the power it manages to pack inside will make it the perfect pick.

**Gateway Packard OmniBook 210ST****Suggested Retail Price:** \$1,099

**Pros:** The 210ST features a nice, simple and clean design which is pleasant to look at and easy to use.

Like most desktop keyboards, the 210ST has a Windows key on either side of the spacebar for increased usability. Although the 210ST ships with Windows 95, there is an option to upgrade to 98.

**Cons:** Both CD-RW and floppy are nonremovable but use the same bay. The user can't have both attached internally at the same time.

With only 200MHz processing, system performance is slower than it could be with more RAM.

There is no modem included with this configuration.

The 12.1-inch screen is 16-bit color at 800x600 resolution or also a bit slower than other machines in the roundup.

The OmniBook 210ST has a lot to recommend it, including the nice and simple design, memory expandability, and general usability. Though these traits make it great for the various users the lower amount of standard RAM, and the inability to put both the floppy and CD inside the case at the same time may put off those same users. The memory problem is easily solved, by putting additional RAM into the case, but the other will just require component swapping and reboots.

The 210ST is a basic machine that's well worth considering. (Note: although the 210ST above \$1,000, the current price is under our \$1,000 mark.)

# The Most Reliable & Safest CSA approved Cases

CSA LR 103134



L.C.H. Resources Inc.

#9 - 13511 Crestwood pl. Richmond B.C. V6V 2G1

TEL: (604) 278-0708 • FAX: (604) 278-0205 • WEB SITE: [www.lchres.com](http://www.lchres.com)



Corporación Aeronáutica FEDERAL	Aviación Civil FEDERAL	Fuerza Aérea FEDERAL	Aviación Civil FEDERAL	Aviación Civil FEDERAL	Aviación Civil FEDERAL
Aviación Civil FEDERAL	4000 kHz a 20000 kHz	4000 kHz a 20000 kHz	4000 kHz a 20000 kHz	4000 kHz a 20000 kHz	4000 kHz a 20000 kHz
5000	54200	54200	54200	54200	54200
2000	13300	13300	13300	13300	13300
Windows 8.1	Windows 8.1	Windows 8.1	Windows 8.1	Windows 8.1	Windows 8.1
1.1	10.1	10.1	10.1	10.1	10.1
800 x 600	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
2.160	1024	1024	1024	1024	1024
3000	2000 transmisor	2000 transmisor	1000 transmisor	1000 transmisor	3000 transmisor
40000	40000	40000	40000	40000	40000
touch-pad	touch pad	touch pad	touch pad	touch pad	touch pad
3	2/3 versiones modernas	2	2	1	2/3 versiones modernas
1	1	1	1	1	1
50000	50000 FOMDA	50000	50000	50000	50000 FOMDA
900	900	900	900	900	900
900	900	900	900	900	900
900	900	900	900	900	900
900	900	900	900	900	900
900	900	900	900	900	900
900	900	900	900	900	900
900	900	900	900	900	900
Liberación	400000 hrs	400000 hrs	400000 hrs	400000 hrs	Liberación
9000	1	1	1	1	1
	cargando cosas	500000 hrs		1000000 hrs, liberación de cosas	cargando cosas
112 x 10 x 21	112 x 10 x 18	112 x 10 x 18	112 x 10 x 18	112 x 10 x 18	112 x 10 x 2
22	10	10	8.7	7.5	10
2 horas, 2 min	1 horas, 1 hora	2 horas, 4 horas	2 horas, 1 hora	2 horas, 1 hora	2 horas, 2 horas
152	200	198	197	205	208
200	200	207	208	200	200
194	194	193	190	197	198
190	190	198	198	198	195
184	180	192	192	186	186
175	175	198	192	180	185
173	173	191	198	180	194
1-800-003-5894	800 524-4102	1-800-003-4718	1-800-003-3907	1-800-003-3364	1-800-003-4711
www-003-5894.com	www-524-4102.com	www-4718.com	www-3907.com	www-3364.com	www-4711.com
1 year	1 year	2 years	1 year	3 years	1 year
2000000	2000000	2000000	2000000	2000000	2000000



### Overall

### Hyperlinks

This month, the choice was obvious. The Hyper-Station's performance was still pretty close to the top of the heap. When you factor in a large screen, a good amount of RAM, and a DVD drive to boot, you've got a very good machine at a great price.

Brain Games and Logic Puzzles for Download Computer HDWallpaper. We can be reached at [hamzah@hamzah.com](mailto:hamzah@hamzah.com)

### Performance (1991)

Twisted pair 568a type VXA-300TZ / Link rate 1100

In terms of performance, both the Lineus V100 and the Tempered Screen V03-380T2 were right up there. The Tempered is very appealing, with all of the pros/cons of the V100, but the Tempered may be more interactive with the larger screen and the option to flip it up for a couple hundred dollars more. Either way, the issue is at the base machine without quite fitting neck-and-panning.



Préface



### Performance

# The Universal Eye

The Boundaries of Photography and Video are Blurring in the Computer Imaging Era

by Jeff Evans



Digital cameras are hot sales opportunities.

Indeed, according to market research, sales jumped from a few hundred thousand units in 1994 to about three million in 1998. The digital camera has very attractive features in its favor (essentially "free film," no developing charges and a familiar form factor and user interface). But early digital cameras were expensive, low in image resolution and quality, and tricky to connect to a computer. However, there has been a massive effort by digital camera makers to overcome the weaknesses, and consumers are voting with their wallets. In a quiet revolution, digital cameras are becoming a cornerstone of "the new computing." Fundamental digital camera technology and new product introductions are both advancing at light speed, compared to the progress of scanners. For example, in 1999, while the market for scanners will be considerable, it seems likely that the better product category will continue to be digital cameras.

In order to succeed in the mass market (as opposed to the graphics specialty market), a product has to fall below a certain threshold of difficulty in order to attract the general home and small business PC user. While many PC users can install a scanner and use it quite happily, many others do have problems (often due to an obscure hardware or software compatibility or configuration problem on the PC), and quickly become frustrated.

But once one wraps one's mind around the fundamentally lower resolution of digital cameras, the many advantages of those cameras make the appeal to PC users quite understandable.

## A CCD Is a CCD Is a CCD

Digital still cameras and modern digital video cameras are all based on an Interline Transfer Charge-Coupled Device (CCD) imaging element — a tiny, sophisticated device that can contain millions of microscopic light-sensitive components. According to *Newton's Telecom Dictionary*, "CCDs are used as image sensors in an array of elements in which charges are produced by light focused on a surface. (CCDs) consist of a rectangular array of thousands (or millions) of light-sensitive photo diodes. Light from a lens is focused on the photo diodes. The photo diodes are charged (charged) which accumulate as the photo diodes. The charges are periodically released into vertical shift registers which move them along by charge transfer to be amplified."

In other words, white light goes through a lens onto an active CCD, and that CCD will emit electrical charges that can be translated electronically into a digital pictorial replica of the original image.

It is up to the manufacturer to decide which package of appropriate optics, electronics and data storage features to wrap around the CCD, to determine what features the digital camera will have. The bypassed images that result from information transmitted from a CCD can be stored on flash memory, diskette or hard drive, recorded on digital videotape, or displayed on a LCD or CRT monitor. In fact, there is no longer any reason to make an absolute distinction between digital still cameras and digital video cameras. They all use the same basic technology to transform light passed through a lens into detailed digital pictures. Depending what kinds of image conversion and storage systems a CCD is hooked up to, it can pass along both single pictures and streams of moving video frames.

Early digital cameras were limited to CCD arrays of about 320 by 200 pixels (64,000 diodes). Currently, the maximum resolution of a consumer digital camera's CCD is 640 by 480 (about 300,000 diodes). High-end digital cameras have megapixel CCDs, with around a million diodes. Panduit says consumer-priced digital cameras (under \$1,000) can be expected with CCD arrays of 2,000 by 2,000 (or four million diodes), by the year 2000 or 2001.

Increasingly, the lines between digital video cameras and still cameras are blurring, as it becomes cheaper to include both still image and moving image options in the same relatively low-cost device. Many digital video cameras are intended for either full motion video conferencing or single image capture. Consumer digital cameras have a still image capture mode in addition to the full motion standard mode.

Better quality consumer-level digital still cameras increasingly have the ability to capture short snippets of motion video and sound, up to the limit of their onboard RAM or integral disk drive capacity.

The major bottleneck to digital cameras' ability to capture motion video tends to be the need for very large amounts of memory or onboard disk drives.

An inexpensive CCDs of even-higher resolutions come onto the market and compact, inexpensive data storage options proliferate in the next couple of years, digital cameras

# The Speed and Power of Motherboards from DFI



NEW  
BX  
SERIES

## Intel® 440BX



### P2XBL

- Intel 440BX equipped with **100MHz** and **140MHz** FSB bus frequency
- Supports Intel Pentium® processor up to **400MHz** and future frequency
- L2/3 Cache
- **PCI® Certified**
- Intel Acceleration Lab certified
- PC 97 ready



### 3D Graphics Video Card w/Intel740 Chipset

#### ACP 7400

- Full onboard **3D rendering** for unmatched performance
- 8M memory architecture
- Full Microsoft setup for 16MB textures
- Color space blending for transparent effects
- Supports multi-flicker NTSC/PAL TV-out (optional)
- AGP and SGI memory supports DMA mode
- Windows® 95, Windows® NT and Microsoft® Direct3D drivers



Please contact DFI distributors in Canada

VANCOUVER AREA: Comtex Micro: Tel. (604) 279-8066 • TKP: Tel. (604) 279-0320

CALGARY AREA: GC Systems: Tel. (403) 250-6528

EDMONTON AREA: GC Systems: Tel. (403) 498-4296

ONTARIO AREA: AIC Systems: Tel. (905) 895-6040 • MCA Computer: Tel. (805) 946-1132

KITCHENER AREA: YSC Systems: Tel. (519) 895-0551

All products and business names mentioned are registered trademarks of their respective owners.

10

NEW  
BX  
SERIES

## Intel® 440BX Dual Processor



### P2XBL/D

- Supports Intel Pentium® processor up to **400MHz** and future frequency
- **Dual Processor architecture** with Intel® 440BX chipsets
- Targets CAD/CAM, desktop publishing and server markets



PC Professional  
"Editor's Choice"

Supports **AMD® K6-2**

**3DNow! Processor**

### P5BV3+

- 100MHz Cache on board
- Supports 100MHz External System Bus Clock Processor
- 16M memory using SDRAM
- Supports PCI
- Modem, mouse, Ga and RTC timer to-power on system
- Monitors processor, battery, power voltage, and in-processor processor fan control
- Equipped with both ATX and AT power connectors

DFI Comdex Fall '96  
booth #M1651  
Sandia & Expo  
convention center

capable of both still and moving image capture will become a standard part of daily life. They'll be present almost everywhere, and will be increasingly easy to connect to computers, directly or the Internet, video networks or printers.

## Memories to Go

Digital imaging devices are all memory hogs in terms of the file sizes high resolution CCDs can generate. Even in a highly compressed JPEG format, a recognized image (1,024 by 768 up to 1,600 by 1,200 pixels) can take up between 100KB and 400KB of storage capacity. Motion video requires an compressed formats such as Motion JPEG1, AVI, MPEG 1, or even, MPEG 2, can require between 600KB and 300KB per frame, and at about 30 frames per second, between 1.8MB and 6.6MB per second, or 108MB to 360MB per minute. Digital cameras have an endless appetite for memory. As higher memory capacity becomes cheap and available, users will want higher resolution, higher quality imagery.

For example, Kodak has introduced its tiny 40MB Click hard drive cartridge to meet this demand while Sony has developed its small Memory Stick memory cartridges as alternatives to the industry-standard flash cartridges.

For storing huge amounts of full-motion video streams from a CCD camera, current options include the 6-hour capacities digital videotape formats or consumer-level digital camcorders. Digital video streams stored on digital tape can be copied at high speeds to a PC hard drive via a FireWire (also known as IEEE1394 or iLink) connection. The major limitation of FireWire is that it is still undergoing finalization as a standard and is currently built into PCs or digital cameras. More common at the end of 1998 is the Universal Serial Bus (USB). While still not perfectly bug free and often offering slower data transfer rates than serial or parallel ports, USB delivers improved performance and ease of use.

Some current digital cameras get around the requirement for on-camera picture storage by allowing the user to directly beam pictures to a printer via an infrared port. Most recently, digital still cameras have presented with enough internal memory chips to store anywhere from a few to a few dozen highest resolution digital snapshots, and rely on a serial cable connection to download pictures to a PC for archiving, image processing, and printing.

The clearest winner to the digital camera image storage/transferring is the Sony Mavica. The Mavica has a 1.4MB floppy drive built in to the camera body, allowing the user to save pictures directly to floppy and copy them to the PC simply by popping the floppy disk out of the camera and into the floppy drive on the PC.

Sony is expected to apply its 200MB HiFD floppy disk technology to the Mavica series rather than later. A HiFD disk option on the Mavica cameras in 1999 or 2000 would allow up to a couple of minutes of very high-quality, full-motion video and audio to be captured and transferred extremely simply and cheaply, effectively completing the imaging of digital photography and video.

## The Digital Camera Tango

Resellers and consumers are confronted with a bewildering range of choices in digital cameras at the end of 1998. There are more than 50 vendors and perhaps 100 models. Some basic parameters must be kept in mind when looking for digital cameras to buy:

- **Resolution** — 640 by 480 true CCD resolution is pretty much the minimum for a serious digital still camera, but at this basic resolution, there is a strict limit to the price consumers will pay (around \$400 to \$500 as

of November). SVGA resolution cameras, with CCD resolution of 640 by 480 pixels are probably the current sweet spot in terms of price/performance. Most Web pages are created at 600 by 800 resolution, making SVGA cameras ideal for applications where the picture will be displayed on the Web and/or viewed on a 14-inch or 15-inch monitor. Megapixel cameras are the dream machines, offering potentially good margins, but attracting lower customers and prices decline further.

- **Memory** — Most digital cameras come with 2MB to 40MB of picture storage memory, plus software on flash memory or EPROM chips inside the camera. A major profit opportunity for resellers is to upsell the camera buyer to an extra 4MB or 8MB of memory, so more pictures can be captured between downloads.

- **Ease of Usability/features** — Almost all consumers know how to use a point-and-shoot-style film cameras. That's why a digital camera designed to mimic a film camera's functions, and which also offers the simplest controls is most likely to be a winner and enjoy the best technical support or product return. Cameras with an option selector wheel, such as the Fuji T10, are easier to use than those with a profusion of buttons and cryptic icons.

- **Optical Quality and Upgrade Options** — For all the sophisticated electronics inside a digital camera, the lenses range from professional to plane throwing away camera quality. The better models from Sigma, Kodak, Olympus and Pgy, come with standard adjustable high-quality adjustable lenses, including telephoto lenses.

- **Accessories** — Resellers take the time to qualify their customers' needs, and who have sales staff who practice photography, can up-sell various digital photography charts to higher-margin add-on lenses, tripods, flashes, battery packs and other accessories.

- **Batteries** — Some models use regular flashlight-style AAA batteries, which are cheap and easy to find. Rechargeable batteries are the best option for a heavy user. Other models use battery packs that resemble notebook PC batteries. They have higher voltage output, but proprietary form factor, high price and sometimes, heavier weight.

- **Software** — Cameras have software installed internally, or flash memory (which usually allows for big firm upgrades from the PC or EPROM chips (which need to be physically replaced to be upgraded). The onboard software controls the camera options, including the image file formats, and the quality of image compression. As well, digital cameras come with a CD-ROM of Mac or Windows software, which lets the user control the downloading, stamping, viewing, manipulating and printing of pictures from the camera to the computer.

## The Future

Some trends are clear. CCDs with up to 2,000 by 2,000 resolution are only a couple of years away. Advances in storage technology will make high-resolution, high-quality imaging affordable for the consumer market. Cameras are the size of fingernails will be embedded in portable devices and connected to the Internet. Successful products will be those with simple operation, flexibility of storage and display, lightness and compactness, and integration into overall computers, entertainment and silicon systems.

For resellers, some important principles of success with digital cameras are: listen to the customer and be prepared to move out of technologies as they become obsolete. Sell quality and customer satisfaction rather than just a low price, which too often translates to a high cost of ownership.

*Jeff Green is Associate Editor of Canadian Computer Wholesaler. He can be reached at [jgf@vixen.com](mailto:jgf@vixen.com).*

# Series **MATSONIC**®

## THE TOTAL AGP SOLUTION COMPANY



### MS 7070S ATX SINGLE PENTIUM II

1300MHz

- Intel 440BX AGP/Pin Chipset 485
- On board memory 16MB/32MB Audio Chip
- Processes up to 450 MHz FSB & Dual-core CPU at 1300 Mhz
- Innovative Test-FPU technology for temperature
- Award 9400 with Trend ChipPharmacy virus function
- Media in function



### EMI 7347 ATX SINGLE PENTIUM II

1600MHz

- EISA/PCI ATX/Floppy Chipset 485
- Supports Pentium II 133-1600 MHz and Celeron 700-1333 MHz CPU's
- On board 32MB/64MB AGP VGA Card
- On board 16MB SDRAM Anti-alias Chip w/CD ROM
- Innovative Sea-FPU technology (optional)
- Premium ATX Power and PCI/ISA 2.0/PCI 4.1/ISA port



### MS-7016S ATX SINGLE PENTIUM II

1600MHz

- Intel 440BX AGP/Pin Chipset 485
- Supports Pentium II 133-1600 MHz CPU at 1600 Mhz
- Ultra ATA/100/133/167/200/233/266/333/400/433/500/667/700/800/1000/1333/1666/1866/2000/2333/2666/3000/3333/3666/4000/4333/4666/5000/5333/5666/6000/6333/6666/7000/7333/7666/8000/8333/8666/9000/9333/9666/10000/10333/10666/11000/11333/11666/12000/12333/12666/13000/13333/13666/14000/14333/14666/15000/15333/15666/16000/16333/16666/17000/17333/17666/18000/18333/18666/19000/19333/19666/20000/20333/20666/21000/21333/21666/22000/22333/22666/23000/23333/23666/24000/24333/24666/25000/25333/25666/26000/26333/26666/27000/27333/27666/28000/28333/28666/29000/29333/29666/30000/30333/30666/31000/31333/31666/32000/32333/32666/33000/33333/33666/34000/34333/34666/35000/35333/35666/36000/36333/36666/37000/37333/37666/38000/38333/38666/39000/39333/39666/40000/40333/40666/41000/41333/41666/42000/42333/42666/43000/43333/43666/44000/44333/44666/45000/45333/45666/46000/46333/46666/47000/47333/47666/48000/48333/48666/49000/49333/49666/50000/50333/50666/51000/51333/51666/52000/52333/52666/53000/53333/53666/54000/54333/54666/55000/55333/55666/56000/56333/56666/57000/57333/57666/58000/58333/58666/59000/59333/59666/60000/60333/60666/61000/61333/61666/62000/62333/62666/63000/63333/63666/64000/64333/64666/65000/65333/65666/66000/66333/66666/67000/67333/67666/68000/68333/68666/69000/69333/69666/70000/70333/70666/71000/71333/71666/72000/72333/72666/73000/73333/73666/74000/74333/74666/75000/75333/75666/76000/76333/76666/77000/77333/77666/78000/78333/78666/79000/79333/79666/80000/80333/80666/81000/81333/81666/82000/82333/82666/83000/83333/83666/84000/84333/84666/85000/85333/85666/86000/86333/86666/87000/87333/87666/88000/88333/88666/89000/89333/89666/90000/90333/90666/91000/91333/91666/92000/92333/92666/93000/93333/93666/94000/94333/94666/95000/95333/95666/96000/96333/96666/97000/97333/97666/98000/98333/98666/99000/99333/99666/100000/100333/100666/101000/101333/101666/102000/102333/102666/103000/103333/103666/104000/104333/104666/105000/105333/105666/106000/106333/106666/107000/107333/107666/108000/108333/108666/109000/109333/109666/110000/110333/110666/111000/111333/111666/112000/112333/112666/113000/113333/113666/114000/114333/114666/115000/115333/115666/116000/116333/116666/117000/117333/117666/118000/118333/118666/119000/119333/119666/120000/120333/120666/121000/121333/121666/122000/122333/122666/123000/123333/123666/124000/124333/124666/125000/125333/125666/126000/126333/126666/127000/127333/127666/128000/128333/128666/129000/129333/129666/130000/130333/130666/131000/131333/131666/132000/132333/132666/133000/133333/133666/134000/134333/134666/135000/135333/135666/136000/136333/136666/137000/137333/137666/138000/138333/138666/139000/139333/139666/140000/140333/140666/141000/141333/141666/142000/142333/142666/143000/143333/143666/144000/144333/144666/145000/145333/145666/146000/146333/146666/147000/147333/147666/148000/148333/148666/149000/149333/149666/150000/150333/150666/151000/151333/151666/152000/152333/152666/153000/153333/153666/154000/154333/154666/155000/155333/155666/156000/156333/156666/157000/157333/157666/158000/158333/158666/159000/159333/159666/160000/160333/160666/161000/161333/161666/162000/162333/162666/163000/163333/163666/164000/164333/164666/165000/165333/165666/166000/166333/166666/167000/167333/167666/168000/168333/168666/169000/169333/169666/170000/170333/170666/171000/171333/171666/172000/172333/172666/173000/173333/173666/174000/174333/174666/175000/175333/175666/176000/176333/176666/177000/177333/177666/178000/178333/178666/179000/179333/179666/180000/180333/180666/181000/181333/181666/182000/182333/182666/183000/183333/183666/184000/184333/184666/185000/185333/185666/186000/186333/186666/187000/187333/187666/188000/188333/188666/189000/189333/189666/190000/190333/190666/191000/191333/191666/192000/192333/192666/193000/193333/193666/194000/194333/194666/195000/195333/195666/196000/196333/196666/197000/197333/197666/198000/198333/198666/199000/199333/199666/200000/200333/200666/201000/201333/201666/202000/202333/202666/203000/203333/203666/204000/204333/204666/205000/205333/205666/206000/206333/206666/207000/207333/207666/208000/208333/208666/209000/209333/209666/210000/210333/210666/211000/211333/211666/212000/212333/212666/213000/213333/213666/214000/214333/214666/215000/215333/215666/216000/216333/216666/217000/217333/217666/218000/218333/218666/219000/219333/219666/220000/220333/220666/221000/221333/221666/222000/222333/222666/223000/223333/223666/224000/224333/224666/225000/225333/225666/226000/226333/226666/227000/227333/227666/228000/228333/228666/229000/229333/229666/230000/230333/230666/231000/231333/231666/232000/232333/232666/233000/233333/233666/234000/234333/234666/235000/235333/235666/236000/236333/236666/237000/237333/237666/238000/238333/238666/239000/239333/239666/240000/240333/240666/241000/241333/241666/242000/242333/242666/243000/243333/243666/244000/244333/244666/245000/245333/245666/246000/246333/246666/247000/247333/247666/248000/248333/248666/249000/249333/249666/250000/250333/250666/251000/251333/251666/252000/252333/252666/253000/253333/253666/254000/254333/254666/255000/255333/255666/256000/256333/256666/257000/257333/257666/258000/258333/258666/259000/259333/259666/260000/260333/260666/261000/261333/261666/262000/262333/262666/263000/263333/263666/264000/264333/264666/265000/265333/265666/266000/266333/266666/267000/267333/267666/268000/268333/268666/269000/269333/269666/270000/270333/270666/271000/271333/271666/272000/272333/272666/273000/273333/273666/274000/274333/274666/275000/275333/275666/276000/276333/276666/277000/277333/277666/278000/278333/278666/279000/279333/279666/280000/280333/280666/281000/281333/281666/282000/282333/282666/283000/283333/283666/284000/284333/284666/285000/285333/285666/286000/286333/286666/287000/287333/287666/288000/288333/288666/289000/289333/289666/290000/290333/290666/291000/291333/291666/292000/292333/292666/293000/293333/293666/294000/294333/294666/295000/295333/295666/296000/296333/296666/297000/297333/297666/298000/298333/298666/299000/299333/299666/300000/300333/300666/301000/301333/301666/302000/302333/302666/303000/303333/303666/304000/304333/304666/305000/305333/305666/306000/306333/306666/307000/307333/307666/308000/308333/308666/309000/309333/309666/310000/310333/310666/311000/311333/311666/312000/312333/312666/313000/313333/313666/314000/314333/314666/315000/315333/315666/316000/316333/316666/317000/317333/317666/318000/318333/318666/319000/319333/319666/320000/320333/320666/321000/321333/321666/322000/322333/322666/323000/323333/323666/324000/324333/324666/325000/325333/325666/326000/326333/326666/327000/327333/327666/328000/328333/328666/329000/329333/329666/330000/330333/330666/331000/331333/331666/332000/332333/332666/333000/333333/333666/334000/334333/334666/335000/335333/335666/336000/336333/336666/337000/337333/337666/338000/338333/338666/339000/339333/339666/340000/340333/340666/341000/341333/341666/342000/342333/342666/343000/343333/343666/344000/344333/344666/345000/345333/345666/346000/346333/346666/347000/347333/347666/348000/348333/348666/349000/349333/349666/350000/350333/350666/351000/351333/351666/352000/352333/352666/353000/353333/353666/354000/354333/354666/355000/355333/355666/356000/356333/356666/357000/357333/357666/358000/358333/358666/359000/359333/359666/360000/360333/360666/361000/361333/361666/362000/362333/362666/363000/363333/363666/364000/364333/364666/365000/365333/365666/366000/366333/366666/367000/367333/367666/368000/368333/368666/369000/369333/369666/370000/370333/370666/371000/371333/371666/372000/372333/372666/373000/373333/373666/374000/374333/374666/375000/375333/375666/376000/376333/376666/377000/377333/377666/378000/378333/378666/379000/379333/379666/380000/380333/380666/381000/381333/381666/382000/382333/382666/383000/383333/383666/384000/384333/384666/385000/385333/385666/386000/386333/386666/387000/387333/387666/388000/388333/388666/389000/389333/389666/390000/390333/390666/391000/391333/391666/392000/392333/392666/393000/393333/393666/394000/394333/394666/395000/395333/395666/396000/396333/396666/397000/397333/397666/398000/398333/398666/399000/399333/399666/400000/400333/400666/401000/401333/401666/402000/402333/402666/403000/403333/403666/404000/404333/404666/405000/405333/405666/406000/406333/406666/407000/407333/407666/408000/408333/408666/409000/409333/409666/410000/410333/410666/411000/411333/411666/412000/412333/412666/413000/413333/413666/414000/414333/414666/415000/415333/415666/416000/416333/416666/417000/417333/417666/418000/418333/418666/419000/419333/419666/420000/420333/420666/421000/421333/421666/422000/422333/422666/423000/423333/423666/424000/424333/424666/425000/425333/425666/426000/426333/426666/427000/427333/427666/428000/428333/428666/429000/429333/429666/430000/430333/430666/431000/431333/431666/432000/432333/432666/433000/433333/433666/434000/434333/434666/435000/435333/435666/436000/436333/436666/437000/437333/437666/438000/438333/438666/439000/439333/439666/440000/440333/440666/441000/441333/441666/442000/442333/442666/443000/443333/443666/444000/444333/444666/445000/445333/445666/446000/446333/446666/447000/447333/447666/448000/448333/448666/449000/449333/449666/450000/450333/450666/451000/451333/451666/452000/452333/452666/453000/453333/453666/454000/454333/454666/455000/455333/455666/456000/456333/456666/457000/457333/457666/458000/458333/458666/459000/459333/459666/460000/460333/460666/461000/461333/461666/462000/462333/462666/463000/463333/463666/464000/464333/464666/465000/465333/465666/466000/466333/466666/467000/467333/467666/468000/468333/468666/469000/469333/469666/470000/470333/470666/471000/471333/471666/472000/472333/472666/473000/473333/473666/474000/474333/474666/475000/475333/475666/476000/476333/476666/477000/477333/477666/478000/478333/478666/479000/479333/479666/480000/480333/480666/481000/481333/481666/482000/482333/482666/483000/483333/483666/484000/484333/484666/485000/485333/485666/486000/486333/486666/487000/487333/487666/488000/488333/488666/489000/489333/489666/490000/490333/490666/491000/491333/491666/492000/492333/492666/493000/493333/493666/494000/494333/494666/495000/495333/495666/496000/496333/496666/497000/497333/497666/498000/498333/498666/499000/499333/499666/500000/500333/500666/501000/501333/501666/502000/502333/502666/503000/503333/503666/504000/504333/504666/505000/505333/505666/506000/506333/506666/507000/507333/507666/508000/508333/508666/509000/509333/509666/510000/510333/510666/511000/511333/511666/512000/512333/512666/513000/513333/513666/514000/514333/514666/515000/515333/515666/516000/516333/516666/517000/517333/517666/518000/518333/518666/519000/519333/519666/520000/520333/520666/521000/521333/521666/522000/522333/522666/523000/523333/523666/524000/524333/524666/525000/525333/525666/526000/526333/526666/527000/527333/527666/528000/528333/528666/529000/529333/529666/530000/530333/530666/531000/531333/531666/532000/532333/532666/533000/533333/533666/534000/534333/534666/535000/535333/535666/536000/536333/536666/537000/537333/537666/538000/538333/538666/539000/539333/539666/540000/540333/540666/541000/541333/541666/542000/542333/542666/543000/543333/543666/544000/544333/544666/545000/545333/545666/546000/546333/546666/547000/547333/547666/548000/548333/548666/549000/549333/549666/550000/550333/550666/551000/551333/551666/552000/552333/552666/5530

# The Paperless Office

by John Rausch

When the personal computer began to appear on office desktops, we were told the paperless office was just around the corner. Instead, thanks to inexpensive high-quality laser and inkjet printers and the desire to have hard copies of everything, the modern office generates paper documents at an ever-increasing rate.

These developments over the last few years have finally made it more possible to emerge from this morass of paper: inexpensive color scanners, CD-R or Zip drives, and a new breed of document management software packages.

## The Hardware

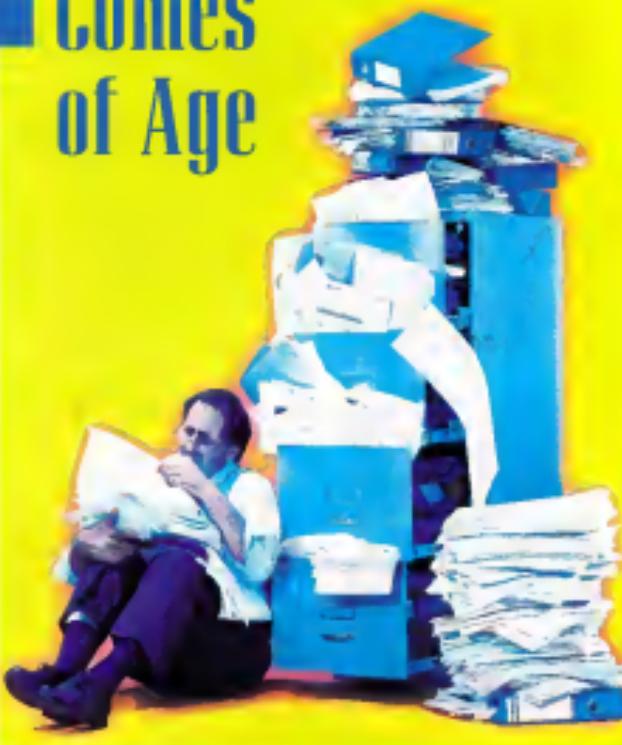
First, you need a good flatbed scanner. These are now available for less than \$200. They are easy to use and work much like a photocopier, except that the "copy" is saved as an image file on the hard drive. A fairly busy office will want a scanner with an automatic document feeder (ADF) to reduce the labor component.

Secondly, a high-capacity removable storage device is needed. Image files tend to be quite large — 1MB or more per page in their raw form.

At my company, we use the Hewlett-Packard 7000 series CD-R writer. CD-R discs hold 650MB and sell for less than \$2 each. Thanks to Adaptec's DirectCD software that ships with the CD-R writer, you can copy, erase and rename files just as you would with any other drive on your system. When "closed" the CD-R becomes a standard CD suitable for permanent read-only storage or distribution.

It is possible to store up to 5,000 black-

## Comes of Age



and-white pages on a single CD-R in TIFF Group 4 format. We update our document base weekly and distribute a single new CD each Monday. We recycle an amazing amount of paper we would previously have filed.

### The Software

Document management software is designed to solve the problems that arises once a few hundred scanned documents have been saved to disk. Without a filing system, these image files are as useless as a stack of R-Kive boxes full of unsorted paper. For this article we reviewed three popular document management/optical character recognition (OCR) packages: Camt PageKeeper, Visioneer's PaperPort and Xerox's Page Pro. Each provides a visual filing system for image files, as well as sophisticated indexing features. Content can be indexed thanks to the OCR software that ships with these products.

#### Product: PaperPort PaperPort Deluxe

Version 5.1.1

Developer: Visioneer Inc.  
(<http://www.visioneer.com>)

Price: \$53.79/99

Rating: A-

Visioneer's PaperPort makes it easy to organize your image files. Simply drag and drop an existing image from its Windows folder to the PaperPort desktop. That copy is filed in the PaperPort directory system in a proprietary format and displayed as a thumbnail on the desktop. Double-click the thumbnail to see the full-size image in PaperPort's "page view." Here you can change magnification or clean up the image. Back at the desktop view you may also click the icon button to bring images directly from the scanner to the PaperPort desktop.

To the left of the PaperPort desktop is a Windows Explorer-like directory tree. It is easy to create folders within folders in this directory structure by pressing Ctrl-N. For example, if you scan a batch of invoices you could create an invoices folder. Within that you may create a separate folder for each of your suppliers, and within the supplier's folder you could create a folder for each month. Every folder has its own desktop. Working with the batch of scanned invoices simply

drag each invoice thumbnail to the appropriate destination folder.

All three of these packages are feature-laden and this review has scratches the surface. However, one great PaperPort feature is the ability to print a file from the Web directly to the PaperPort desktop. That is very slick and easy. Simply select FilePrint from your browser and select PaperPort from the Printer Name drop down list and click [OK]. The other excellent feature is WebPublisher. Simply drag a group of selected images, photos for example, to the WebPublisher icon and an

HTML Web page will be created. In the browser you will see a nicely formatted page similar to a contact sheet that displays rows and columns of photos in thumbnail form. Clicking on the thumbnail will lead the full-size photo. This can be useful for preparing reports to be uploaded to an intranet, just add text and do a few simple edits to the generated file.

Archiving to CD-R or Zip media is handled well. A freely distributed viewer makes it possible to view PaperPort files distributed within a company.

#### Product: PageKeeper Standard 3.0

Developer: Camt Corp. (<http://www.camt.com>)

Price: \$199

Rating: B+

PageKeeper is similar to PaperPort except in one major respect: rather than copy the original image file PageKeeper keeps a pointer to the original. The interface is very similar. Folder tree is on the left, the desktop with thumbnails is on the right. Double-click to expand-view and edit or whatever. The pointer system greatly reduces the amount of hard disk space required and maintains a link to an image that is continuing to be modified. One problem we had with this system was that as we modified our file structure or changed CDs the program would lose its ability to find the image the thumbnail was based on.

Like the other two packages reviewed here, PageKeeper allows "stacking" of documents. Stacking groups related documents into a multi-page-document that can be read in sequence. File operations such as moving and exporting are simplified if related documents are stacked. In addition, a stack reduces clutter on the desktop.

#### Product: Page Pro 2.0

Developer: Xerox Corp. (<http://www.xerox.com>)

Price: \$3399

Rating: B

Page Pro saves image files in a very compressed XIF format. Pre-existing image files are dropped into the Page Pro desktop and should be converted to xif files. The system is highly integrated with the scanning process. We found the best results were achieved when all scanning was done with the Page Pro interface above.

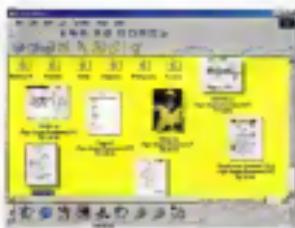
The user interface is similar to Windows Explorer except we were unable to find a way of displaying a directory tree.

Page Pro shines in the image-editing department. All the basic annotation tools are there as well as nice arrows and rubber stamps like "Draft" and "Approved." A photo-editing package bundled with Page Pro makes it excellent for manipulating graphic images.

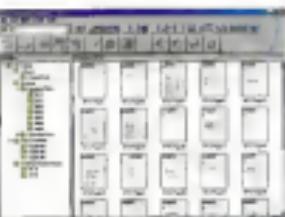
### Finding Your Data

All three document management packages reviewed here support background OCR and thus, searching on content. But we were unable to test the advanced searching features of PageKeeper, as they are not included in the Standard version. PaperPort has an excellent search engine. An index of every word in the database is maintained in the background. We were able to locate the number sequence 24590 almost instantly. Clicking [Show Details] brought up and window where we could see that it was indeed the invoice we were looking for. On clicking the [Go To] button we were presented with the thumbnail of the invoice, and with a double-click our document was in full view. **B+**

*John House is co-owner of Visioneer's Esquire DataGraphics. He can be contacted at [house@bcympoint.com](mailto:house@bcympoint.com).*



Scanned documents are displayed in the Xerox Page Pro interface.



Camt PageKeeper's similar directory structure interface my



Encyclopedias  
and TV-Related  
Packages are  
Hot Sellers

by James Bucholz

# Now That's Edutainment!

Education is the number one reason that Canadians buy PCs. Entertainment's the next big draw, according to a 1997 study by AC Nielsen. So is it any wonder that edutainment (a useful combination of the two words and one capital) is an important software category?

More specifically, in AC Nielsen's "Canadian Home PC and Entertainment Study," researchers found more than three-quarters of respondents used PCs primarily for games. The heaviest gamers are males aged 18 and older, followed closely by females of the same age group. But surprisingly, the next biggest game players are children between the ages of seven and 12.

Software developers such as Bryderbush, Knowledge Adventure and The Learning Company have coupled children's enjoyment of computer games with learning activities. Mom and Dad can rest assured their elementary school-age children will not only become increasingly adept at working the computer, they'll learn useful things while doing it.

And although kids seven years old may not be quite as taken with computers as their older siblings, there are many entertainment products to encourage those as young as 12 months to spend time computing.

Bracepoint Canada Inc., a major distributor of home-oriented computer products, reports its best-selling educational/entertainment software titles are encyclopedias. Software packages based on popular children's TV shows (aimed at children of less than 12 years of age) are also good sellers.



## McClelland & Stewart Inc.

*The 1999 Canadian Encyclopedia World Edition* (\$89.99)

*The 1999 Canadian Encyclopedia Student Edition* (\$34.99)

McClelland & Stewart has extended a winning formula to grade school students with the 1999 Canadian Encyclopedia Student Edition. It summarizes material from the World Edition into something more manageable for the late-elementary and junior-high age group.

Compared to the World Edition, the Student Edition is pared down. It offers three types of content: Canadian articles, Geog definitions and multimedia items. In contrast, the World Edition presents Macmillan articles, Canadian and *Canadian Encyclopedia* articles, Internet links and updates, plus multimedia items.

Content is simplified when compared to the parent publication. For instance, a quick search on the subject of pollution yields information on land, air and water pollution, as well as pollution controls. In comparison, the World Edition turns up much more detailed data covering the types of pollutants, air resource management, and air pollution pathways.

The Student Edition still offers a hefty amount of text to wade through, however. And although not as sophisticated in vocabulary use as the World Edition, students below Grade Six level will need assistance deciphering some of the written content.

In addition to providing Canadian material, this title includes the Fifth Edition of the *Canadian Encyclopedia*, a French/English and English/French dictionary, the *Geog Canadian Dictionary*, *Rogers' Thesaurus*, and *Macmillan's Book of Reference*.

## Microsoft

*Encarta Reference Suite 99*

(\$339.99, with a \$45 mail-in rebate)

Encarta Encyclopedia Deluxe 99 is bundled with Encarta Virtual Globe 99 and Microsoft Bookshelf 99, to create the five CD-ROM reference library entitled Encarta Reference Suite 99. Content ranges from 360-degree photographs and annotated illustrations to new articles, history excerpts and reproductions of historical documents.

Encyclopedia Deluxe 99, the main package in the suite, offers a new Web-style interface allowing users to select a topic and navigate among elements ranging from articles to illustrations and weblinks. To ease the search process, Encarta uses natural-language query technology. That allows the user to just type in questions such as: "What's the largest ocean in the world?"

With more than 40,000 articles and thousands of multimedia elements, Encyclopedia Deluxe 99 also offers command and control and text-to-speech technology, which lets the user navigate through the encyclopedias using spoken commands and hear text read aloud by a synthesized voice.

It also includes more than 2,000 original documents (from such notables as Albert Einstein), which provide first-hand accounts of historic events and perspectives on complex issues. Users can also access more than 16,000 videos, pictures, illustrations, audio clips and ani-

mations, as well as links to 35,000 personalized learner sites.

Encarta Virtual Globe 99 offers a comprehensive collection of worldwide maps in 18 different customizable map styles ranging from topography, vegetation or population, to eco-regions and political regions.

With more than 600,000 entries, Microsoft Bookshelf 99 provides six best-selling reference works ranging from *Rogers' Thesaurus* and the *Canadian Dictionary of Quotations* to *The American Heritage Dictionary*, Third Edition and *The Microsoft Press Computer and Internet Dictionary*.

## Knowledge Adventure

*Play With The Trolls* (\$39.99)

This interactive game is based on the popular *Teletubbies* television show created for the BBC in 1997. It was the first TV show created for children as young as 12 months. The show became a phenomenon in England and reached the U.S. and Canada this year.

The *Teletubbies* are four technological characters that look like chubby baby dolls in felt suits. They live in Tellybbyland, a place of rolling hills, small friendly animals and talking flowers. They reside in a Tellybbyland Superdome that looks like a spaceship and their names

# STORAGE SOLUTION

**Mobile Rack**

**Hot Swap . . . Multiple Devices for one PC**

Increase Storage Capacity, Exchange Storage Device, Simplify data Security



Perfecting your computer business with quality & durable accessories.

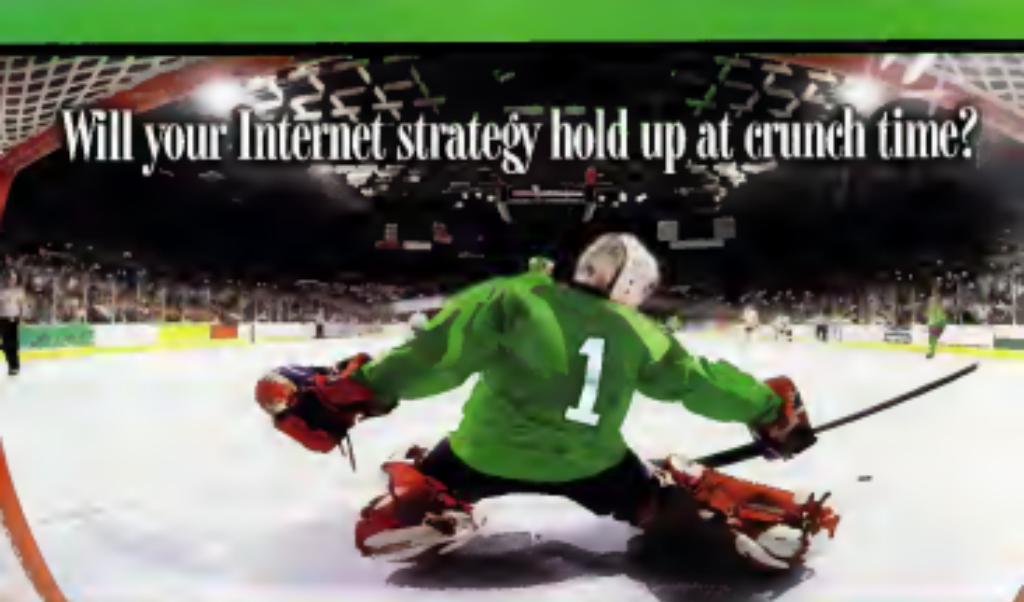
1-800 567-7227

[www.acd.com](http://www.acd.com)

**Dealer Only**

#120-13751 Mayfield Place, Richmond, B.C. Canada V6V 2B8  
Ph: (604) 278-2811 Fax: (604) 278-5211 toll free: 1-800 567-7227

# Will your Internet strategy hold up at crunch time?



## It will if you attend Internet World Canada '99.

No matter what position you play on your e-business team, you've got to stay on top of your game in order for your company's overall e-business strategy to be a winner. And Internet World Canada '99 is your best training ground.

Individually targeted conferences and workshops let you and your teammates focus on the specific tools and techniques you each need to achieve peak performance.

- E-business Symposium
- Enterprise Internet Forum
- Web Advertising and Marketing Forum
- Webmaster's Forum
- IP Telephony Exchange
- ISP/CON Canada '99
- Internet Security Symposium
- Internet Appliances & Devices Forum
- Java Developer Workshop
- Supply Chain Management Forum
- Web Writer's Workshop
- Distance Learning Workshop
- Internet Financial Services Summit
- Web Publishing Day
- Knowledge Management Forum
- Future Focus Workshop
- Information Architecture Forum

PLUS the exhibit hall—featuring more than 120 suppliers—lets you evaluate Internet products, services and systems for all your company's applications.

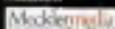
E-business is one game you can't afford to lose. Get on the winning team. Register to attend Internet World Canada '99. Visit us at [www.internetcanada.com](http://www.internetcanada.com).



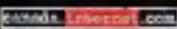
FEBRUARY 2-5, 1999  
METRO TORONTO  
CONVENTION CENTRE  
SOUTH BUILDING  
TORONTO, ONTARIO  
CONFERENCE, FEBRUARY 2-3  
EXHIBITS, FEBRUARY 3-5

For event details and online registration, visit [www.internetcanada.com](http://www.internetcanada.com)  
To request a brochure, call 1-800-800-1988, or e-mail [register@internetcanada.com](mailto:register@internetcanada.com)  
To exhibit, contact Patricia Marshall at (905) 279-7887 or e-mail [canadian@internetcanada.com](mailto:canadian@internetcanada.com)

PRESENTED BY



SPONSORED BY



light up to show pictures and movies of children in the real world. Play With the Teletubbies features seven activities including 11 video segments, 11 nursery rhymes and two "magical" intertides.

The manufacturers say the product is designed to enhance imagination and creativity, stimulate spatial awareness, encourage pattern recognition and handwriting skills.

The package features a cursor made of "pink spittle" that comes out of the Teletubbie Tinky Winky's mouth. Many of the intertides can be activated by pointing the cursor on an item, rather than having to click, which is difficult to impossible for a very young child.

The activities include Chase the Nao-nao, a well-meaning vacuum cleaner that has stolen the Teletubbies' staple, Tuffy tucu. The child helps chase the Nao-nao and in the end gives it a big hug. Children will discover that moving the mouse quickly in a scrubbing motion will speed up the movements and make the Teletubbies walk faster.

In the Hiding Game feature, the child helps a Teletubbie find those that are hiding so they can all join in a big hug.

#### **Broderbund Software Inc.**

(a subsidiary of The Learning Company)

The Raggedy Movie Activity Challenge (\$39.95)

Raggedy Adventure Game (\$39.95)

Raggedy Print Shop (\$29.95)

Based on the Emmy-award winning American TV program, the Raggedys are ready to weave and educate kids aged six to 12 with adventures, brain games and print projects.

A precursor is an upcoming motion picture release — *The Raggedy Movie* — The Raggedy Movie Activity Challenge features brain-twister games and introduces baby Dot, the newest member of the Pickles family. Dot joins the cast of siblings including: Tommy, the one-year-old infant leader; Charles, his robust, excitable sibling; Angelica, Tommy's older, bullying cousin, and twin pals Phil and Lil.

Wherever adults are around, the Raggedys act like the babies they are, but when they're alone they talk to each other with the vocabulary of five-year-olds. The Raggedy Movie Activity Challenge features six original games based on the arrival of Dot. Kids build problem-solving, creative and critical-thinking skills while moving through 180 levels of games such as speeding through traffic in the Repair Wagon, steering the Aqua Barge through raging rapids, and freeing off-escaped monkeys. The Raggedy Adventure lets kids join a 3D battle for the world. The aliens and their evil queen are about to take over the earth and it's up to the kids to stop them by solving more than 30 puzzles, games and activities.

Raggedy Print Shop lets kids create art projects featuring the Raggedys. Choosing from more than 20 projects, 200 ready-made designs and 600 different Raggedy graphics, kids can create banners, birthday cards, calendar, stationery, signs and posters, stickers and wrapping paper.

#### **Creative Wonders**

Elaine's Art Workshop (\$24.95)

Elaine's Art Workshop provides hundreds of ways for children five and up to create artwork and imaginative projects. They can print pretties and add favorite Sesame Street characters, as well as create birthday cards, finger puppets, masks and posters.

Oversized buttons and helpful creative hints from Elsie ensure that every effort leads to a masterpiece. The manufacturer says the product helps develop creative expression, while familiarizing the child with shapes and colors, drawing and painting, letters and numbers as well as the keyboard and mouse. It also comes with a greeting card maker and stereo saver creator for Windows only.



#### **Creative Wonders**

Madeline's Thinking Game (\$29.95)

Madeline's Story Day Adventure (\$29.95)

In Madeline's Thinking Game, children join Madeline, star of the animated TV show, in exploring her schoolhouse full of fun and challenging learning activities. Children build thinking and problem solving skills in each room as they solve more than 30 puzzles and play 11 activities with three levels of difficulty.

The product is intended to promote critical thinking, reasoning and problem solving while improving memory, spelling, pattern recognition and creativity. It includes five full-length Madeline music videos, and printable award certificates.

Rainy Day Adventures take children into Madeline's studio where they paint, play the piano and sing along with movies. The rest of the house is also explorable, as each room is a new adventure.

A multi-lingual game lets children match the French or Spanish word with the corresponding English word. Watercolor-like tools, pencils and a magic brush are used to paint fair scenes.

Children can solve more than 30 puzzles of pictures of Madeline and friends and can also dress up the characters. There are 40 activities that can be printed out and done away from the computer.

An animal gear up for the Christmas season, these products combine the key elements of learning and fun. Meanwhile, the relatively low prices make them promising stocking stuffers. **spc**

*James Stachak is Bureau Editor of *Toronto Computer* and is based in Toronto. He can be reached at [jsp@jcs.ca](mailto:jsp@jcs.ca)*

**Attention VARs, Resellers and Dealers,  
Your new source for PC Software.**

# **INTER-PLUS INC.**

**SOFTWARE DISTRIBUTORS**

**Business Productivity, Educational and Games.**

# **1-800-510-9011**

**Monday to Friday 9AM to 8PM Eastern Time**

**Shipped anywhere in Canada within 48 hours!  
Call and ask for your copy of our price list catalogue.**

# Voice Over IP: TALK About the Potential!

By Paul Diorio

Look who's talking. People on the Internet, that's who.

And people in business will soon be talking across networks too. VARs had better start talking to IP-network manufacturers if they want to get their foot in the door of this potentially massive market.

Some background: to send e-mail hopping around the world, or to view Web sites on host computers located almost anywhere telephone lines travel, the vast majority of Internet users simply make a local call to their ISP and log on to the Internet. Since the Internet can transmit multimedia data (text, images, animation, sounds and voice — it didn't take long for enterprising companies to develop software to let two people anywhere on the Internet talk to each other).

Do you want to talk through your computer in Toronto to your sister in California? As long as you both have an ISP, log on to the 'Net at the same time and have the same Internet telephony software on your multimedia PC (sound card, microphone, speakers required), you can talk to each other without incurring long-distance charges.

If you paid a flat fee for unlimited Internet access you could, in theory, talk forever and not pay one cent more.

The first Internet telephony calls were half-duplex (users had to take turns talking as if they were using walkie-talkies), but now full-duplex software on the market allows for near-normal phone-like conversations to take place over the 'Net.

However, the quality of calls can leave something to be desired, especially in peak periods when the 'Net is sluggish. The user

can also get booted off-line unexpectedly, by some quirk of the Internet or an ISP bug.

But a little on-line sluggishness and the somewhat unstable nature of the Internet has not prevented traditional computer companies from getting into the Internet telephony act.

Microsoft Corp. is incorporating its NetMeeting software into its Web browser, Internet Explorer. NetMeeting lets users place telephone calls while on-line, conduct video conferences using the Internet or corporate intranets and collaborate on wordprocessing and spreadsheet documents.

IBM Corp. has not yet dealt with IDT Corp. that allows IBM to promote IDT's NetPhone Internet phone service by including the software in its Internet access kit. The two companies will share the revenue generated.

## Impact of VoIP

What impact will voice over Internet protocol (VoIP) have on traditional telephone long-distance service providers?

Last year, the *Wall Street Journal* reported that U.S. long-distance carriers could see revenues drop by US\$620 million to US\$925 million if AT&T Corp. alone could lower up to US\$350 million in annual revenues by the year 2001.

The research organization, Kellen & Associates estimates 35 per cent of all phone calls will be made using Internet protocol (IP) networks by 2002, a potential \$60-billion market. And a report by the British consulting firm, Analysys, claims all Internet-based phone services combined are poised to overtake conventional (switched network) phone

traffic by the year 2000.

We're not just talking about computer-to-computer VoIP. Toronto-based Quest Communications International Inc. is using Internet technology to offer long-distance calls, any time of day or night for 7.5 U.S. cents per minute. The service should be rolled out to 125 cities by the end of the year.

IDT is working on phone-to-phone long-distance service called Net2Phone Direct, a system that uses the Internet backbone instead of the phone company network to deliver calls. Subscribers would use their normal phone to make long-distance calls and pay a flat rate to IDT for Internet access.

PC World favorably reviewed two products that enable users to make calls over the Internet without using a computer or long-distance service provider: ApkooPhone from Apkoo Inc. and InfoTalk IT 1000 from InfoMedia Inc. Each one costs less than US\$300 and contains everything a user needs for Internet telephony, including a built-in modem.

Both the caller and the called party need the same Internet phone system as well as a traditional phone. The caller makes a normal long-distance call using the traditional phone and, when the call is answered, the Internet phones then find and identify each other via a local ISP connection. The two parties can then hang up the telephone and complete their conversation on-line.

## Corporate Talking

As VoIP matures, it will have a major impact on the business world.

Employees with access to voice and



data-enabled IP ATM and Frame Relay networks will be able to send and receive internet e-mail, share data, send and receive faxes, make phone calls and access the Internet — all from their computers.

If telefaxes think on-line conversation is just a corporate fantasy, they should think again. A recent survey of 32 major Canadian corporations by Calgary-based MarketSight concluded that 83 per cent of large Canadian companies are in the midst of evaluating voice-over data networks, 16 per cent are preparing pilot projects or have started them. Only 19 per cent of the companies surveyed see no application for VoIP.

The potential for the exponential growth of VoIP is one of the reasons Northern Telecom (Nortel), one of the world's largest providers of public and private telecommunications and data solutions, announced plans to invest more than US\$13 billion in stock in Bay Networks Inc., a company that manufactures and distributes networking products for corporate enterprises. This could be the largest merger of voice and data networking companies on record.

Companies and consumers are pushing for suitable networks that make optimal use of IP technology, says Steve Pearce, Bay's executive vice-president in charge of IntermediaCom. "We think we're creating a US\$30 billion market within three years that didn't exist before."

Cisco Systems Inc. and 3Com Corp. have developed voice and data integration strategies focused in multi-service networks that meld voice and data traffic. Of course, Microsoft, IBM, Novell and other companies

are pursuing VoIP strategies.

The Army IP-Telephony Gateway (ATG), from Army Telecom in North York, Ont., was recently selected for a C73 (Corporate Telephony Integration) Magazine editor's choice award designed to recognize the best new telecommunications products.

Army Telecom provides communications solutions for users including ISPs, carriers, alternate service providers, and corporations with call centres, help desks or geographically dispersed offices and markets. Its ATG product is described as a suite of software products that provides voice and fax communications over any IP network, including the Internet and corporate intranets.

### Hurdles to Leap

Of course there are obstacles in the way of VoIP.

Currently, the reliability standard for voice networks is "five nines of reliability" or 99.999 percent reliable. However, private data networks are only about 94 percent reliable, carrier data networks are about 91 percent reliable and the public Internet is about 65 percent reliable.

Not until the reliability of a data packet equals the reliability of a dial tone will total convergence make sense, say analysts. Still, if you want new technologies to conquer new markets for your business, and new revenue streams in which to fish, then when talking about VoIP, it is

*Paul Llima is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at [pllima@sympatico.ca](mailto:pllima@sympatico.ca)*

### Call Centres Get New Voice

by Paul Llima

NET2, New Brunswick's provincial telecommunications company, is working with Toronto-based Bellsouth Technologies to develop products that allow call centres to serve callers over the Internet — by 1999.

Under the agreement, the two companies will integrate an Internet call centre software solution, based on Bellsouth's LiveContact software, into net centres so that consumers and vendors can communicate by text or voice over the Internet.

It will also enable cell centre operators to push information — such as electronic brochures, photographs, price lists — across the Internet, again related to their net visitors. Although the project is in the pilot stage, the companies' announced plan is to offer it to New Brunswick call centres by the end of 1998, and to other cell centre providers next year.

"We're evolving the traditional call centre into a multimedia contact centre," said Jack Davis, vice-president of NET2. His business partners are used by companies representing 80 per cent of the significant industrial sectors.

The need for the product can be attributed to the growth of the Internet and electronic commerce, according to Mark Skupnick, CEO of Bellsouth Technologies. While companies find they need sales people to sell products such as houses and CDs on-line, they have found they need sales staff to use the Internet for more complex transactions and to build customer loyalty," says Skupnick. He claims LiveContact is "bridging the phone industry with the PC industry." Bellsouth is also in the market for dealers to create and market solutions for LiveContact.

Although NET2 and Bellsouth Technologies are bullish about their partnership they face stiff competition in this area. Nortel's Sympatico, part of its call centre portfolio, includes Internet, fax and e-mail access as well as a Web call-back feature that lets interactive customers chat with call-centre staff by text or audio.

And in June, IBM announced new customer-service-call-centre solutions that include CallPath buttons to establish voice links between Web site visitors and call centre customer service representatives.

# VISUAL BASIC, for Proficient Beginners



## for Proficient Beginners

by Stephen Bartholomew

Title: *SAMS Teach Yourself MORE Visual Basic 6 in 21 Days*

Author: Lowell Moyer

Publisher: SAMS (Macmillan Computer Publishing)

Web-site: <http://www.computerbooks.com>

Code: \$42.95

Description: A beginner's guide for those who are familiar with VB fundamentals. The focus is on application development, including database and Web-based work.

Rating: A-

The field of Visual Basic programming is too large to be encompassed in any one book. But for those who already have a casual knowledge of Visual Basic, "SAMS Teach Yourself MORE Visual Basic 6 in 21 Days" is meant as a starting point on a journey that consists of a series of books.

The back cover suggests a "user level of beginning to intermediate." However, if you are new to programming, you should already be familiar with VB object properties, events, methods, form modules, basic controls and simple program development. If you are an experienced programmer than you can go directly to this book after surveying the tutorial information packaged with Microsoft's VB software.

Unlike other "21 day" books this immediately focuses on application development — combining several programs into a cohesive unit yielding an application. This gives the book a unique practical value lacking in others. For example, the first module goes into the project life cycle: Design, Coding, Testing and Debugging, and Documentation. Being broken down further into its own life cycle emphasizes the design phase, design description, functional definitions, technical definitions, pseudo-code and form layouts.

All the components that make up an application from user interface, local/remote database access, on-line help including HTML-based help, reporting including Crystal Reports, Internet access, regression testing and scripting to application packaging and distribution are covered. This application focus is this book's strength over the scores of introductory Visual Basic books.

Microsoft's Visual Basic 6 software package is much stronger in database access, control durability and Internet integration than previous versions. These areas are amply explained in this book.

The coverage includes many additional topics from those covered earlier in this review. Here are a few of them:

- Common Dialog,
- Using templates,
- Class creation, object creation, collections, array processing,
- Visual Data Manager,
- Data Form Wizard,
- Data Environment Designer,
- Data Report Designer,
- Crystal Reports,
- OLE drag and drop, system tray control, data controls,
- Error handling,
- Building on-line help, HTML, Help Workshop,
- Testing and debugging, breakpoints, watch expressions, conditional compiling,
- Increasing performance, using Lightweight Controls, optimizing code, compiling versus P-code, using the Resource Compiler and Editor
- Creating an ActiveX Document using the Hyperlink object, using the ActiveX Document Migration Wizard,
- Using Microsoft Agent to employ animated characters as interactive assistants to introduce, guide and entertain,
- And using the Visual Component Manager, Visual Code Profiler, Image Editor, Visual SourceSafe.

"SAMS Teach Yourself MORE Visual Basic 6 in 21 Days" should be recommended, due its emphasis on applications. There is good coverage of many advanced controls and the features unique to Visual Basic 6.0.

**Stephen Bartholomew** is a lecturer, researcher and technical consultant at Capstone College, and can be reached at [steve@capstone.ca](mailto:steve@capstone.ca). The college and its faculty have ACE, CAPCE, CDPs (Microsoft), Novell, IBM and local partnerships, accreditation and certifications.

### Scenario:

You're creating a new application and you need some options to consider for the user interface, since to users, the interface is the application. In addition, you need tips on building complex forms of screens.

### Solution:

In Day Three of the book, you examine and code the three main interface types:

**Single Document Interface or SDI:** This is the simplest interface consisting of a single data window that users work in. A good example is the Print application.

**Multiple Document Interface or MDI:** An MDI application has a Windows Menu, which allows users to create multiple work windows and easily switch between them. A good example is Microsoft Word.

**Explorer Interface (EI):** An EI application has a single window divided into a tree-style view on the left and a display area on the right. A good example is Windows Explorer.

In Day Seven, there is extensive coverage of what goes into good form design including performance and usage tips. These topics are very relevant to standard VB books. A simple tip — use 640 by 480 resolution when designing forms and stick to the standard colors.

### Results:

You are armed with enhancing or creating database options. You have understood data in your database. What methods can you use to reduce repetitive data? You want to simplify your coding of database access where previously you used DAO for local access to data and RDO for remote access. In addition, you want to investigate adding Internet access to your application.

### Solution:

In Week Two, you learn all about databases and Microsoft's Universal Data Access (UDA) strategy — allowing for any database to be accessed the same way. Normalization is covered, which is the formal process used to reduce data redundancy. In Day Nine, you convert into SQL as in use in queries. In Day 10 you use ActiveX Data Objects (ADO) to access both local and remote databases without the need to choose between DAO and RDO. In Day 14, you add Internet browsing and file transfer capabilities to your application. Plus, you'll leverage your VB programming skills to using VBScript and see the effect of Dynamic HTML on interactive Web applications.

Life used to be so simple.

Motherboards, for example, were once a one-size-fits-all sort of thing. Intel's Socket 7 design could accommodate Pentium processors, the MMX successor, and clones from AMD, Cyrix and others. PCI slots were for high-end controllers, and ISA slots were for everything else. Sound cards were either made by Creative Labs or aimed for compatibility with that company's Sound Blaster standard.

As a result, with a little trial-and-error fitting, it was easy to make a PC ship a broad range on the front and go into business.

It seems it was just too easy.

Then, Intel migrated its product line over to a new, incompatible design — Slot 1. Pentium II and low-end Celeron from the company used motherboards with that design, while the corporation's products continued to work with Socket 7 designs.

AMD has announced its next generation K7 CPUs will (like Pentium II), be designed as a cartridge, and will fit in a slot that will be "mechanically identical" to Slot 1.

Nearly pure mechanically identical across the slot will look just like Intel's version. But AMD's socket isn't electronically compatible! AMD CPUs will fit in Intel sockets and vice versa — they just won't work. This is bound to confuse users, and require that motherboard manufacturers design and stock yet another line of incompatible boards.

Not to be left out, Intel has switched strategies for the low-cost Celeron line yet again.

Initially, Celeron CPUs were compatible with Pentium II-style Slot 1 designs — an Intel strategy to wean the market from the older Socket 7 designs favored by the clones.

Recently, however, Intel announced a new line of socketed Celeron models, a design change made possible by the integration of the Level-2 cache in the latest generation of Celeron. But while the 370-pin socket resembles the classic Socket 7 design, it also won't be compatible.

Initially, Intel will continue to sell the single-edge connector Slot 1 Celeron alongside the plastic pin grid array (PPGA) socketed model, but it will be phasing out sales of the Slot 1 model. This will force motherboard manufacturers to support yet another product line, and make it more difficult for consumers to upgrade a Celeron to a higher-end Pentium II.

Processor and motherboard designs aren't the only place where standards are fragmenting. Do you want a PCI or AGP graphics card? And at that AGP or AGP2?

Just as flat-panel display prices are approaching the point where they might become an option, we start to get analog models that will work with a standard video adapter, and not one, but two competing standards for digital connections. (The digital models improve clarity by eliminating the digital-to-analog-to-digital conversions otherwise required—but at the cost of only working with a limited range of video adapters.)

And vendors and manufacturers have to try and make their way

through a maze of competing and incompatible 3D models (primarily of interest to game players). This could become less of an issue as more and more games are designed with Microsoft's Direct 3D as usual. By writing for Direct 3D (or part of the Direct X group of programming environments), developers do not have to write code for 3D adapters they wish to support. As long as the adapter has a Direct 3D driver, any Direct 3D game or program will be playable.

Similarly, as game developers finally abandon DOS, old-style Sound Blaster compatibility has become less and less important. As a result, the new generation of audio adapters have finally been able to move away from the old ISA bus. New products are all using PCI, assuaging an older hardware configuration nightmare.

At the same time, we are again seeing several competing standards, particularly with Creative Labs Sound Blaster Live models opposing a variety of products featuring Acer's A3D designs (Acer's recent A3D 3.0 specification and Yonex 2 sound processor up the ante, while Creative is offering its new EAX drivers for all its PCI models.)

As with the 3D video war, much of this conflict will be inevitable to end-users as long as they stick to running DirectX games.

But you can bet that the manufacturers will be heavily promoting their competing products. And many game developers will still be stuck in the middle, producing products that only run on some, but not all hardware. Then again, if the USB products finally take off, USB speakers may make sound cards of any sort obsolete — at least for much of the mass market. The hard core gamers will, I predict, prefer the four or five speaker 3D sound that they can only get with one of this new generation of PCI sound cards.

Of course, USB products have not yet fulfilled their promise. Connect up to 127 devices? Not a chance. Hot swap plug-and-play? Maybe. A couple of devices chained together may work. But then again, they may not. Expect better success with Windows 98 than with Windows 95 with USB extensions, but even with Windows 98, problems reportedly continue.

Of course, each of these operating systems supports a different set of hardware standards. Ironically, the Macintosh has increasingly supported the majority of PC standards — adopting the PCI bus, IDE drives and USB (with the latter).

Eventually, we may see some stability once again, as sound and 3D video and other standards emerge victorious. Then again, this fragmentation may continue for quite a while, as unique markets continue to solidify for low-end PCs, mid-range home machines and business offerings.

Manufacturers, distributors, vendors and customers (to say nothing of tech support staff) may wish nostalgic for the mid-1990s, when it seemed one size fit all.  $\square$

Alan Ezban is a computer journalist and writer living in Vancouver. He can be reached at [ezban@home.com](mailto:ezban@home.com).

# TOO MANY CHOICES

You're  
Not  
Alone!



By  
Alan Ezban

sort obvious — at least for much of the mass market. The hard core gamers will, I predict, prefer the four or five speaker 3D sound that they can only get with one of this new generation of PCI sound cards.

Of course, USB products have not yet fulfilled their promise. Connect up to 127 devices? Not a chance. Hot swap plug-and-play? Maybe. A couple of devices chained together may work. But then again, they may not. Expect better success with Windows 98 than with Windows 95 with USB extensions, but even with Windows 98, problems reportedly continue.

Of course, each of these operating systems supports a different set of hardware standards. Ironically, the Macintosh has increasingly supported the majority of PC standards — adopting the PCI bus, IDE drives and USB (with the latter).

Eventually, we may see some stability once again, as sound and 3D video and other standards emerge victorious. Then again, this fragmentation may continue for quite a while, as unique markets continue to solidify for low-end PCs, mid-range home machines and business offerings.

Manufacturers, distributors, vendors and customers (to say nothing of tech support staff) may wish nostalgic for the mid-1990s, when it seemed one size fit all.  $\square$

Alan Ezban is a computer journalist and writer living in Vancouver. He can be reached at [ezban@home.com](mailto:ezban@home.com).

# NEW PRODUCTS

## Compaq's DVD Notebook is Aimed at Consumers

Ahead of what the company says is a "consumer" market, Compaq Canada Inc. has launched the Presario 1810 notebook PC, including an integral DVD drive.

The Presario 1810 is based on a Pentium 3 1.3GHz processor, with 64MB RAM, a 4.4GB drive, a large color screen, 56Kbps modem and USB connector. Suggested list price is \$919.99.

The introduction of a high-end consumer-oriented notebook such as the Presario 1810 is a sign that Compaq seems to fight for leadership of an emerging premium consumer notebook market, a space in which Hewlett-Packard, Emerson, Sony and Dell are also aiming.

See <http://www.compaq.ca>



## IBM Ships 17-inch Flat Panels

(IBM) — IBM Corp. has announced two 17-inch flat-panel monitors that measure on the front's bezel 16.1-inch models and will fit lines that have half what the 18.1-inch model cost at its introduction in July.

The new digital IBM (1780) was scheduled to ship this month at an estimated street price of US\$849.99. An analog version (1781) will ship early next year for US\$929.99, the company said.

By contrast, the 18.1-inch IBM dropped from more than US\$2,000 about a year ago to a recent price of US\$1,299.99, IBM wound down production. That's a plunge of about 30 percent in a year.

IBM predicts the new flat-panel monitors will be popular with customers who use high-end graphics, computer-aided design, engineering, scientific and medical applications (medical manufacturing and cell-culture markets).

The digital model (1780) uses the new Video Electronics Standards Association (VESA) standard Plug and Display digital graphics interface. By avoiding conversion to analog signal and back to digital, it offers a sharper image at a lower cost.

See <http://www.ibm.com/powersystems/>



## Targus Makes Mini-Holster Case

With the sudden proliferation of pocket-sized computing devices such as the iCom Pilot line and the Microsoft Windows CE devices, there is also an epidemic of snagging pockets and rattling brief cases, as handheld users try to find some elegant and safe way of transporting these tiny gadgets.

Targus, a maker of carrying cases for mobile computers, has responded to the need with a line of six new carrying cases for PDAs, handheld PCs and mini-laptops. The new line of cases ranges from a simple, lightly padded sleeve for a Palm Pilot-sized device, to a leather leather portfolio for Toshiba iSeries.

The new cases make for a handsome bullock, but are designed to both organize and protect a handheld PC user's info pile, including business cards, travel documents and press. See <http://www.targus.com>.



## Hewlett-Packard Refreshes Product Lines

Hewlett-Packard Co. has completed its most extensive line of printer, copier, scanner and digital camera product rollouts ever, with a total of 26 major new products.

For example, HP has added a monochrome device — the 800 dpi, 8-page HP LaserJet 1000A, as well as a monochrome personal laser, the LaserJet 1000. Two new color laser printers — the HP Color LaserJet 4500 and HP Color LaserJet 8000 Longhairs, are aimed at the corporate networking-printer market, intended for professionals who care little about image quality.

The new HP LaserJet 4100 printer is a high-speed, high-volume business laser. The HP 2500C and HP 2500CM color ink-jet are intended for small office workers that need fast, affordable color printing.

The Digital Sender is operating entirely different. It's a scanned-mailing product that's aimed at allowing cash-on-delivery capture and transmission of documents, to turn paper into e-mail in a matter of seconds.

## Big, Big Fighter Platters

Fujitsu Canada is shipping high-capacity hard drives based on a storage capacity of 3,040 per platter. (Hard drives may contain as little as a single platter, especially in notebook PCs where drive height has to be minimized, but more commonly, desktop PC drives contain several platters.)

In the case of the new Fujitsu drives, the Picoblock 12 and Picoblock 12H offer up to 18.3GB capacity in a high-speed, low-cost three-platter design. The Picoblock 12 drives run at 5,400 rpm drive,零售 in six models, while the Picoblock 12H drives run at 7,200 rpm, giving higher performance for power users. Prices range from \$350 to \$570, depending on model capacity and speed.

See <http://www.fujitsu.ca>



## Toshiba Launches Satellite

Toshiba of Canada Information Systems Group (ISG), has released the Satellite 4000CDT, based on the Intel Mobile Pentium II 300MHz processor. That notebook comes standard with a 6.4GB hard drive, a 13.3-inch active-matrix screen, a 16-bit stereo sound system, 32MB of RAM, and an internal 24X CD-ROM drive. The total system weight is 6.8 pounds. The Satellite 4000CDT has a suggested list price of \$4,699.

Toshiba has announced an across-the-board price cut on the rest of the Satellite line, averaging seven percent price reductions. For example, the Satellite 4000CDS dropped from \$3,129 to \$2,149, and the Satellite 4010CDT went from \$3,299 to \$2,699. See <http://www.toshiba.ca>.



Attention Resellers:

# CCW AUCTION IS HERE!



**Do you have  
product to move?**

**Are you looking  
for a great deal?**

"CCW Auction" lets you hook up with buyers and sellers across North America. Get rid of extra inventory and find great deals on all sorts of computer products.

Discover some real bargains!

You can access more than two million on-line North American purchasers! Buying and selling on the Internet is quick and easy at this virtual auction grounds. There are no membership fees or hassles at this cyber-auction, and you can shop from the comfort of your own desk.

Electronic commerce has arrived.  
Take advantage of the opportunities today.

**VISIT <http://www.ccwmag.com> NOW!**

# PEOPLE

## Compagny Canada Corp. announces New Positions

### Novell Canada names Education Manager

Novell Canada Ltd. has appointed Jennifer Guiney to the position of education manager.

She will work closely with the Novell Authorized Education Centers and Novell Education Academic Partners to promote Novell certification, education and training initiatives.

Gilman has 10 years of management/business experience in Canada and Australia. Before joining Novell Canada, Gilman held the position of regional education manager at SRI Systems/Software Learning Technologies.



Jennifer Guiney

Richmond Hill, Ont.-based Compagny Canada Inc. has named Bill Morris as company manager, PC product marketing.

The company says he will be responsible for the strategic management of Compagny's commercial desktop and portable, personal digital assistant and option products categories. He will also develop and implement product-based marketing plans. He has responsibility for business planning, and achieving market share, inventory, profitability and customer satisfaction level targets.



Bill Morris

Chris Sullivan has been named company manager, enterprise systems and storage.

His responsibilities cover Compagny's enterprise computing software products, including fault-tolerant, transactional systems, Alpha servers and workstations, networking and storage products.

Daniel Coulombe takes the position of product manager, Intel and Alpha workstations. He is responsible for product management for Intel and Alpha-based workstations, including product launches, pricing, promotions and forecasting.

### HP Adds Quebec Managers

Hevelott Packard (Canada) Ltd. has appointed two general managers for its Quebec operations. Andre Lorranger and Mario Viala will jointly manage HP's Canadian business operations, while Michael HP's Support Response Centre, the Express Help Desk, and sales and service offices in Montreal and Quebec City.

In addition to their new roles, Lorranger and Viala will retain their existing sales management responsibilities within HP's computer organization. Specifically, Lorranger will manage HP's Eastern Canada sales, and Viala will manage the HP team that provides business solutions to major enterprises in Quebec City.



Andre Lorranger



Mario Viala

# Calendar

### Dec. 8-10 Knowledge Management Conference & Expo Project <http://www.knowit.com>

### Jan. 11-13 Canada/Canada West Vancouver <http://www.comdex.ca>

### March 20-21 Electronic Commerce Conference & Expo Series: Integrating Electronic Commerce Strategies into Your Business Systems Toronto <http://www.360-program.com> Call: (416) 632-1500

Do you have an upcoming event you'd like to see listed in CCM's Calendar? E-mail [cmw@compuserve.com](mailto:cmw@compuserve.com)

## Reader Poll

### This Issue:

As we approach year end, Canadian Computer World readers would like to get the opinion of our readers about the overall health of the industry.

### Our Question to You:

As a channel player, how does your own company's 1998 financial situation compare with the previous year?

- Our financial picture is about the same as in 1997
- There's been substantial improvement.
- There's been some improvement
- Our financial situation is somewhat worse
- Our financial situation is substantially worse.

Overall, is the Canadian computing channel in general, which most closely matches your view when comparing the financial situation of 1998 to 1997?

- The financial health of the industry in 1998 was similar to 1997
- There was considerable financial improvement in 1998 over 1997

- There was some financial improvement in 1998 over 1997
- The industry was somewhat less financially/healthy in 1998, compared to 1997
- The industry was considerably less financially healthy in 1998, compared to 1997

### Last Issue, we asked:

Lacking towards 1999, how enthusiastic will your customers be about purchasing USB devices?

You said:

- 70%** In 1999, USB devices will slowly pick up popularity
- 20%** In 1999, USB devices will explode onto the market-place
- 10%** The industry needs to chance with USB, the technology won't be significant.

## Win FREE software!!

Visit our Reader Poll Awards page online at <http://www.ccmag.com> for details.

Call (604) 608-2686

### Congratulations

Log on to our Web site, <http://www.ccmag.com>, E-mail: [ccmag@pvt.ca](mailto:ccmag@pvt.ca), or send your responses and comments by fax to:



# SHARP

www.sharp.ca

SMARTER

## NOTEBOOKS

### PC-A100

Introducing the Sharp  
PC-A100 Notebook.  
Thin and Powerful in a  
Lightweight Design. In  
Stock and available at  
Pro-Data!



#### Specifications:

- 233 MHz Pentium® Processor with MMX™
- 11.3" SVGA Active Matrix LCD
- 64MB EDO RAM and 3.2GB Hard Drive
- 56Kbps Data/Fax Modem (V.90)
- Universal Serial Bus and 4Mbps Infrared Port
- External Monitor Port and Type II PC Card Slot
- Thin 0.83" and Lightweight 3.09 lbs. Design
- Extended Battery Life  
Up to 2.5 hours with Internal Li-Ion Battery
- Up to 8.0 hours with External Li-Ion Battery remove
- External Floppy Drive with Serial
- Parallel and PS/2 Ports
- External 20-Speed CD-ROM Drive remove

Contact us for information on this product and many others, and let's discuss your dealer requirements and how we can serve you.

# Pro-Data

Visit the Pro-Data Website - [www.pro-data.com](http://www.pro-data.com)

#### CONTACT: B.C.



RICHMOND

Phone: (604) 297-6013  
Fax: (604) 291-4381

#### ALBERTA

EDMONTON

Phone: (403) 453-6210  
Fax: (403) 260-1798

#### MAN./SASK./N.W. ONT.

Winnipeg

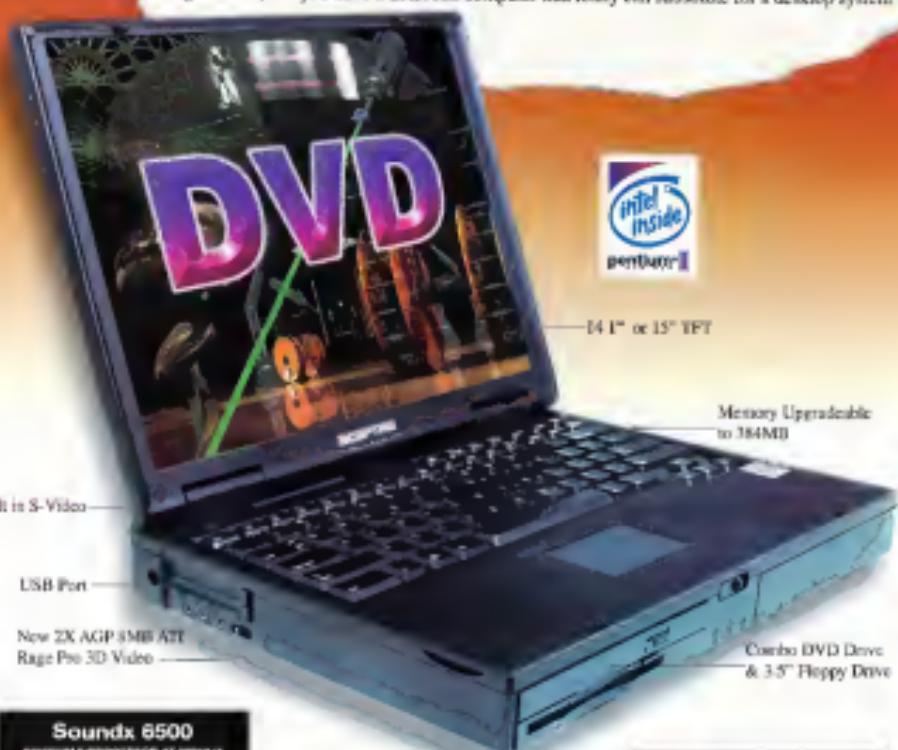
Phone: (204) 631-9810  
Fax: (204) 635-8212



Out of Town Dealers call 1-800-567-3274

# Oct. 1998 CRN Test Center Recommends

The Sceptre S6800 delivers sizzling performance for a notebook computer. Throw in good ergonomics, and you have a notebook computer that really can substitute for a desktop system.™



## Soundx 6500

PENTIUM II PROCESSOR AT 233MHz

- 14.1" XGA Active Matrix TFT Display
- 64MB SDRAM
- 40GB Ultra ATA Hard Drive
- Stereo 40-bit Creative 3D Sound Card and 3.5" Floppy Disk Drive
- New 2X AGP SMB ATI Rage Pro 3D Video
- 1655 10 Surround Sound and Bluetooth Wireless
- Intelligent Laptops (on Battery)
- Cooling Case
- POMCLARK V98 Plus
- Microsoft® Windows® 98
- Touchpad

**4999\$** CDW

## Soundx 7500

PENTIUM II PROCESSOR AT 233MHz

- 14.1" XGA Active Matrix TFT Display
- 64MB SDRAM
- 40GB Ultra ATA/100 Hard Drive
- 24X Max module CD-ROM
- 1.44MB module FDD
- 512K L2 cache
- Intelligent Laptops (on Battery)
- Cooling Case
- POMCLARK V98 Plus
- Microsoft® Windows® 98
- Touchpad

**3899\$** CDW

## Soundx 5500

PENTIUM II PROCESSOR AT 233MHz

- 14.1" XGA Active Matrix TFT Display
- 128MB SDRAM
- 30GB Ultra ATA Hard Drive
- 3X module CD-ROM
- 1.44MB module FDD
- 1.13K L2 cache
- Intelligent Laptops (on Battery)
- Cooling Case
- Microsoft® Windows® 98
- Touchpad

**2799\$** CDW

To order a Sceptre Soundx Notebook Please call

**1-888-350-8989**

For more information about Sceptre Soundx notebooks  
check out our web site at [www.sceptre.com](http://www.sceptre.com)

Intel the Intel Inside logo, Pentium and registered trademarks of Intel Corporation.

**SCEPTRE**  
EXCELLENCE FOR ALL THE WORLD TO SEE